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ORIGINAL ARTICLES.

PLASTIC SURGERY IN GYNECOLOGY.

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The practice of surgery in all its branches requires a mechanical trend and an ability to devise means to accomplish a given end. All surgery is a species of civil engineering. It is a means of overcoming deficiencies or derelictions in the animal mechanical economy. If nature has been faulty in her distribution of the raw material, surgery comes to her assistance and adjusts the mechanical balance of affairs, as in the club foot, hypospadias, cleft palate, or wry-neck. If there has been an accident to the economy, surgery steps in with the engineering problem to be solved, what is to be removed and what is to be repaired, or what new means is to be found to regain a lost function or repair a damaged one. Now in all this it is evident that the mechanics of the part affected must be thoroughly understood before its repair can be accomplished, or intelligently undertaken. Once understood, a function may be imitated mechanically; artificial legs can run a bicycle or a foot race, and artificial hands accomplish many of the nicest manœuvres. Without such understanding all surgery or indeed any mechanical process is merely experimental and its results but tentative. Herein lies the fault and the failure of many of the mechanical and operative devices in the so-called improved methods of operations.

It requires no surgical genius to stitch a testicle in the inguinal canal in order to cure a hernia, or to perform some similar flighty trick that is novel and idiotic. But this is not surgery. The argument may be followed out indefinitely.

To do efficient plastic work in gynecology, a careful study of the anatomy and physiology of the parts injured and to be dealt with is necessary. Just as the scientific understanding of the mechanism of normal delivery has developed the scientific obstetrical forceps under the name of "Axis Traction," with the consequent diminution of the accidents of labor hitherto observed, so the study of the function of the parts often unavoidably damaged, renders their repair a matter of exact science modified only by the skill of the operator. The mechanism of perineal resistance and fracture is not a matter of chance, and the parts to be restored to function must be replaced in as nearly their physiological condition as possible. A heaping up of tissue here or a splitting there, although simulating a relay of opposing structure, does not necessarily mean strength, and it often happens that the advantage gained is apparent, not real.

Let me then insist that in order to mend a perineum intelligently, the mechanism of labor must be understood and the lines of fracture appreciated. The perineum does not break haphazard but always in well-defined lines, save under instrumental violence, and when tears are due to this

cause they must be dealt with as lacerated wounds anywhere else. The anatomical fractures due simply to obstetric force and resistance must be mended in the lines in which they occur.

Looked at from this standpoint the multitude of operations devised for the repair of the perineum is strangely grotesque. In no other part of the body has so much been attempted with so little scientific knowledge, unless we except that fools' paradise, the abdomen. Operation after operation has been suggested, with this or that name attached to it, without a shadow of justification for existence in the scientific literature of the day. Unfortunately, however, a name often goes as great a distance in surgery as on a forged note, and the operation gains prestige not from its merit but from its introducer. It is not my intention to hold up any special operation to ridicule, but rather to insist that any operation having for its end the remedy of a mechanical deficiency, shall have for its foundation a firm scientific principle and not simply a plausible plea that it brings about a condition which *simulates* the normal. By this it should stand or fall, as it would at once disclose whether it be a really valuable procedure or merely a specious simulation. Without such criterion, it will be necessary to make a careful comparative study of the methods proposed. Meanwhile the younger operator is left floundering in the whirlpool of discussion and claims, while the unfortunate patient is suffering all the inconveniences of experimental surgery. Here let it be formulated that an operation or procedure justified by scientific deduction is never reprehensible; and that the merely experimental procedure should be frowned upon, unless the condition of the patient is so bad that any operation, whatever, must improve her and be a relief.

Under the present abdominal regime of surgery, perineal and plastic work bids fair to become a lost art. The general practitioner is led to look inside the abdomen for all the evils of a woman's flesh, while, too often, it lies in injury done to the bladder or perineum or cervix during labor. Neglected cervical tears do much to render pelvic surgery necessary, while, on the other hand, indiscriminate *cervical* surgery often emphasizes previous *pelvic* disturbance and renders operative interference necessary. Hence will be seen the necessity carefully to discriminate between cases that operation will improve and cases that it will render worse.

In cases of serious pelvic invasion with accompanying lacerated cervix, it is often better, or imperative, first to do the pelvic operation and to follow this, *at another time*, with the cervical repair. I unhesitatingly condemn the plan advised by some to perform internal and external operations at one sitting. Surgery has not for its object the experimental determination of how much endurance the surgeon may possess, nor of how long the sufferer can stand anæsthesia without collapse. That "enough is as good as a feast," is nowhere truer than in the surgery of gynecology. There is enough discomfort incident to the surgery of any one or two of the simpler procedures, without heaping upon this the pain and danger of an abdominal operation.

Apart from the growing discomforts of neglected perineal and cervical lacerations, it must be remembered that the existence of a damaged and defective perineal structure conduces to future difficult and sometimes dangerous labor by predisposing to failure of rotation of the head. In reference to injuries of the cervix, it is always to be remembered that serious laceration of this structure is frequently a cause of after-coming malignant disease, of subinvolution, sterility, congestion and the like; often putting the patient in a condition of chronic invalidism from pain, menorrhagia, dysmenorrhea, displacement and mechanical derangements exhibited in relation with the bladder and rectum.

I have sufficiently dwelt upon the scientific and physiological conditions calling for attention to the surgery of these parts, and have made plain from a scientific standpoint what the requirements of plastic gynecological surgery are. My own practice in this branch of surgery has been to test, as far as possible under the lines laid down, what has seemed to be an advance in the surgery already at command. I regret to say that in many instances my only conclusion has been that I have wasted time and done something my good sense should have forbidden, but after all the good may lie in this—that my own experience may be of use, as here, in suggesting what ought not to be done, teaching negatively by contrasting forbidden

methods with others that have been uniformly successful and beneficial to the patients.

I have reminded you that perineal tears always occur at certain parts of the perineal structure. Without going into the anatomy of the parts or into a discussion of the reason for this fact, it is sufficient to remember, as each one of us with a practical experience must, that these tears are either lateral under the ramus of the pubes, or central extending from vagina toward the rectum. The tears toward the rectum tend to run around it rather than through it, owing to the differentiation of structure in these two tubes. Now, it is to be remembered, that the tears of the vagina are always from within outward, from above downward, and that therefore the external or skin operations for perineal lacerations are essentially non-scientific procedures. All operations for the restoring of the integrity of these parts should be done in the lines of their destruction and, *therefore, from within outward and from above downward.* When the skin of the perineum is involved, mending of this is merely a cosmetic procedure. The cosmetic element too often predominates in many of the so-called perineal devices.

In examining a perineum to determine whether it has been ruptured or not, a mere ocular inspection will not answer. A central tear is almost always visible. Not so a lateral sub-ramic laceration. To detect this the finger should be introduced into the vagina, when the laceration will be determined by the fissure caused by the separation of tissue on one or both sides. The early, prompt, and, if possible, the immediate repair of these tears is to be advised under surgical rules applicable elsewhere in the body. If the patient happens to be too ill or too weak to endure surgical interference, operation is not to be insisted upon. Discretion is to be used here as elsewhere in deciding cases.

The silk-worm-gut with shot is by far the most preferable material to be used for sutures. As little tissue as possible is to be included within the ligature, and strangulation is to be avoided. Early operation precludes the necessity for clipping away even the minutest bit of tissue, and the parts are usually very prompt to heal. When the sphincter ani has been involved, care must be taken to bring the ends of the muscle into apposition. To accomplish this a special stitch is necessary which I shall demonstrate in the discussion. So far as the method is concerned, it is evident to you all that the one suggested is that of Emmet. His procedure stands preëminent among the scientific suggestions and methods of modern gynecology. Its logic is unassailable, and its results cannot be fairly challenged. His work is as delicately true and accurate as an Italian mosaic, while his technique is so simple that to follow it needs only commonplace attention. His demonstration of the scientific value of his method is as accurate as that of any mathematical proposition, and criticism of the ends obtained, or of the method pursued, arises either from ignorance or misunderstanding.

In old tears the method and lines of denudation as indicated in Emmet's own book, are unfortunately obscure. This fact I believe in a measure explains the reason of the operation having so long been questioned, criticised and misunderstood.

Anemia.

In anemic cases the following may be employed:

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Strychniae sulphat	gr. ⅓.
Tr. ferri chlor	ʒij.
Vini ergotae	ʒss.
Syr. simplices	ʒiss.
Aq. destill. q. s. ad	ʒvi.

M. Sig.—Teaspoonful three times a day.

—*Med. Press and Circular.*

Syphilis among the Esquimaux.

It has been generally believed that the Esquimaux were immune against syphilis, as no case was observed in one hundred and fifty years, although the infection was known to have been repeatedly taken to Greenland by sailors. After the year 1872 fifty cases were observed amongst the natives of the villages of Foighet and Arsuk; in 1889 only ten cases were observed, while there have been none since 1890. Helms, in discussing the subject, attributes the rarity of the disease to a diminished susceptibility on the part of the natives. Other medical men equally versed in the pathology of the Esquimaux are inclined to ascribe the extinction of syphilis to the treatment and severe hygienic measures adopted by the Danish government, including the isolation of the infected village.—*Universal Medical Journal.*

THE INJECTION TREATMENT OF HERNIA; WITH FORMULA FOR FLUID.

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This method of treatment was first experimented with by the elder Pancoast, in 1836. He used the tincture of iodine, and the reaction was so disastrous that the profession very justly condemned the whole procedure. Later on, Heaton, of Boston, and still later, Warren of the same city, reported numerous cures. Their injections not being of a proper character, and not asceptic, and their methods crude, violent inflammations resulted, confining their patients to their beds, if nothing worse. Again was the practice condemned. Others followed in Heaton's footsteps, some however, using still more powerful chemicals, such as sulphate of zinc, iodine, carbolic acid, and even the strong mineral acids, and with like disastrous results.

The method has, however, been again brought forward, but upon a strictly scientific basis.

The treatment of reducible hernia is a very profitable branch of minor surgery that has been almost entirely lost to the medical profession. Fully one-tenth of the population suffer from rupture. Physicians have allowed nearly all of this rich clinical material to go directly to the truss makers, because they could do no more than the truss maker—simply fit a truss.

Such cases may now be reclaimed to the profession by adopting the injection treatment, with a proper fluid, and a suitable syringe. This method is receiving the attention of, and being adopted by, progressive physicians all over the country.

Chemistry has come to our aid in this matter. Substances that are in themselves harmful or obnoxous, by combining them with other substances, or by arranging their elements differently, become useful therapeutic agents or agreeable preparations, as the case may be. Take the oils of rose and the oil, or spirits of turpentine, as examples of elemental arrangement. Both are hydrocarbos. The first has the formula C_{16} H_{34}, the latter, C_{10} H_{16}. This shows the vastly differing products resulting from a different arrangement of their elements.

Then, too, we have new products, from the laboratory; preparations that but a short time ago were scarcely dreamed of, and that are now well nigh indispensible.

Chemistry and surgery, that was accepted ten or twenty years ago, is too far behind the age to be allowable now. Text books not more than five years old, are, in many respects, worthless, so rapid have been the advances.

Applying all this to the treatment of hernia, we find, by using improved instruments and methods, that reducible hernia may be quickly and easily cured without danger, with little discomfort to the patient, and no loss of time; the essentials being a deft hand, a proper fluid, and a trocar and canula syringe, that I have devised for this especial purpose. The technique of the operation for inguinal hernia is as follows: Place the patient on the operating table, reduce the protrusion, if out, wash the parts well with some antiseptic solution, invaginate the scrotum with the index finger and locate the external ring; inject into the skin, at this point, five or more minims of a five per cent. solution of cocaine, to which has been added one drop of a one per cent. solution of nitro glycerine. (Granules of cocaine and glonoin are very convenient for this purpose. Boil the water in a spoon, dissolve the granules in the required amount and inject.) Have the hernial syringe filled with fluid, displace the air, wipe off the drop of fluid that may appear at the needle's end, and carefully note how far the canula must be turned off, in order to entirely cover the needle point. Allow three minutes for the cocaine to take full effect, and having drawn back the canula, exposing the needle-spear, thrust the instrument through the skin and fascia at the point of the cocaine injection. Push it well into the external ring, carefully avoiding the cord. Change the instrument to the other hand, and again invaginate the scrotum, and be sure that the

needle has entered the ring. Then screw down the canula until it covers the point of the needle, and, dipping down with the instrument, pass the canula, by gentle manipulations up the canal to the inner ring. In doing this, bear in mind that the inguinal canal is from one and a half to two inches in length, lying nearly parallel with Poupart's ligament, and about one-half an inch above it.

Having reached the inner ring, slowly inject from three to five minims of fluid, a minim at a time; wait one or two minutes, slightly withdraw the piston of the syringe in order to empty the needle, and withdraw the instrument. Gently massage the parts to evenly distribute the fluid. Cover the puncture with antiseptic collodion. There will be more or less of a burning or smarting sensation experienced by the patient, but by lying quietly for a few moments it will pass off. It may return for a short time when the truss is adjusted, which must be done before the patient rises from the table. He must also be instructed to take off the truss only after lying down at night, and put it on before arising in the morning.

Repeat the operation every five or seven days, according to the amount of fluid used, and the degree of reaction. There will be some soreness for a day or two and the patient must be told this. A certain amount of healthy inflammation must be set up and maintained for a sufficient length of time, in order to effect a cure. From six to twelve injections usually suffice. The older the patient, the longer the time required. A well fitting truss must be adjusted and worn for a few days before operating, in order to see if it keeps the hernia well reduced.

The fee for treatment ranges from $25 to $100, or more, according to the case and the ability to pay; one-half to be in advance. A double rupture should be double pay. In treating these, alternate the injections, first one side, then the other, so as not to produce discomfort. The charge for fitting a truss should be not less than $10, to be paid at once.

Any physician may soon become expert in the above operation. There is absolutely no danger whatever if a proper fluid and instrument be used. In all my cases I have not had a single dangerous symptom, or one bordering on that line. It is well, however, to commence with a minimum dose, and increase as may be indicated.

With an ordinary hernia, in a vigorous, healthy individual, after the sixth injection the treatment may be suspended for a few weeks; then test the parts by taking off the truss, allowing the patient to stand up, and thus determine whether any further injections may be necessary. The truss should be worn for from three to six months after treatment ceases.

In some forms of rupture, where the canal has become obliterated, as well as in old or very fat patients, it may be advisable not to lay aside the truss at all.

Rupture in children is sometimes cured with a single injection. The dose with the little ones must be light.

The fluid that I use has the following composition:

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Complex Salts of Aldehyde	30	per cent.
Iodo-Ethylate of Guaiacol	30	" "
Sulpho-Tannate of Zinc	20	" "
Free Guaiacol	5	" "
Beechwood Creasote	15	" "

These rare and delicate chemicals are separately prepared, then carefully combined and dissolved in an antiseptic medium, in strict conformity with their respective affinities and dosage. Injection dose, three to five minims.

I use the same fluid in the treatment of hydrocele and varicocele. Rinse out the syringe and needles with alcohol; never with water. Do not allow water to come in contact with the fluid; water decomposes it.

Permanganate of Potash as an Antidote to the Cyanides.

Dr. J. V. Kossa (*Central-Blatt f. d. Medicinischen Wissenschaften*, No. 17, 1894,) from experiments on animals claims that the permanganate of potash is an efficient antidote to hydrocyanic acid and the cyanides. A dose of over ten times greater than the fatal one was given to rabbits and immediately followed by the permanganate; no symptons of poisoning followed. The potash salt oxydizes the poisonous compounds into innocuous preparations.—Translated for the MEDICAL AND SURGICAL REPORTER by the Translator, F. H. Pritchard, A. M., M. D.

COMMUNICATIONS.

THE ETIOLOGY, PATHOLOGY, AND TREATMENT OF INTESTINAL FISTULA AND ARTIFICIAL ANUS.*

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A correct appreciation of the causes which give rise to the formation of intestinal fistula is prerequisite for the adoption of appropriate treatment. The term intestinal fistula will be used in this paper to signify a communication between the lumen of any part of the intestinal tract and the surface of the body or with any of the hollow abdominal or pelvic viscera. A practical distinction must be made in regard to the size and character of such abnormal communication into 1, fistula; 2, artificial anus. The difference is one of degree and not of kind. Speaking from a purely surgical standpoint, a fistula of the bowels is an opening through which gas or only a part of the liquid and solid intestinal contents escape, while an artificial anus implies a complete interruption of the fecal circulation at the abnormal outlet. The latter condition is determined either by the size of the defect in the intestinal wall or the existence of mechanical conditions which divert the intestinal contents in the direction of the abnormal outlet and away from the distal side of the bowel. The mechanical conditions which thus divert the fecal current are either a flexion or the presence of a spur or septum at a point opposite to the abnormal outlet, caused by the projection of the intact part of the intestinal wall in the direction of fistulous opening. The surgeon aims to produce such an obstruction to the fecal circulation when he desires to procure rest for the distal part of the intestinal tract by the formation of an intentional artificial anus. The amount of intestinal contents which escapes from the intestinal canal through such an abnormal outlet depends less on the size of the opening than the existence of one or both of the above mentioned mechanical conditions. If the intestinal tube is straight or only slightly curved, even a large opening may resemble a simple intestinal fistula, while on the other hand, a small opening associated with a flexion, or a well-developed spur, appears clinically as an artificial anus and must be treated as such. The internal fistulæ communicate most frequently with another part of the intestinal tract, the bimucous fistula of Dreshfeld with the bladder, vagina, and uterus.

ETIOLOGY. Intestinal fistulæ are divided into: 1. Intentional. 2. Accidental. The surgeon occasionally resorts to the formation of an intestinal fistula or artificial anus, in the treatment of inoperable mechanical obstruction, by resorting to a colostomy or enterostomy, according to the location of the mechanical obstacle which has necessitated the operation. If in such cases the intestinal opening is to serve only a temporary purpose, it is closed by operative measures in the same manner as will be advised in the discussion of the operative treatment of accidental fistula, after the distal part of the intestinal canal has been rendered permeable spontaneously or by subsequent operative interference.

Accidental fistulæ are produced, according to the immediate cause, by: 1. Gunshot and stab wounds of the abdomen. 2. Submural injury of the bowel. 3. Ulceration of the bowel. 4. Strangulation of bowel. 5. Foreign bodies in intestinal canal. 6. Malignant tumors. 7. Intestinal actinomycosis. 8. Pelvic and other abdominal abscesses. 9. Appendicitis. 10. Unintentional injury to the bowel during abdominal and pelvic operations. 11. Ligatures. 12. Sutures. 13. Drainage tubes.

GUNSHOT AND STAB WOUNDS. These injuries usually result in fatal septic peritonitis if the intestinal wound or wounds are large enough to permit escape of fecal material into the free peritoneal cavity, and not subjected in time to the direct operative treatment. A fecal fistula, ex-

* Inaugural thesis before the Gynecological Society of Chicago, June 15th, 1894.

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ternal or internal, may result if the wound is small or if only a part of the intestinal wall has been injured, in which event the injured part becomes adherent to the parietal peritoneum or an adjacent hollow organ. A resulting circumscribed abscess may later under such circumstances, perforate the abdominal wall or discharge its contents into the adherent organ and thus establish either an external or internal fistula. According to the experience of surgeons during the War of the Rebellion, such an occurrence is more likely to follow injury of the colon than wounds of the small intestines.

SUBMURAL INJURY. Partial laceration of the intestinal wall without a penetrating wound of the abdomen occasionally results in circumscribed peritonitis, caused by the migration of pathogenic microbes from the intestinal canal through the damaged wall to the surface of the bowel, where, if present in sufficient number, they may produce an abscess which not only completes the intestinal perforation, but may result at the same time in the formation of an external or internal fistula. Such fistulæ are usually small and close spontaneously in the course of time. In suspected submural injury of the bowel without evidences of complete rupture and fecal extravasation, it is of the greatest importance to enforce efficient treatment with a special view of preventing this remote complication.

ULCERATION. Ulceration of the bowel is frequently followed by the formation of an intestinal fistula if the free peritoneal cavity is shut off by adhesions before perforation takes place and the ulcer manifests no tendency to repair. In the upper part of the intestinal canal the round, perforating ulcer of the duodenum may produce such a result. I have observed two cases of perforating typhoid ulcer in which a diffuse abscess formed which was freely incised and drained. In one case the abscess cavity contained at least a quart of fecal material which had evidently been accumulating for more than a week. The patient's general condition was such as to contraindicate search for and suturing of the perforation. In both cases life was prolonged from one to two weeks, but the patients finally succumbed to sepsis. I can readily conceive that under more favorable circumstances such patients might recover under similar treatment with an intestinal fistula which would in all probability heal spontaneously or could be closed later by operation with a good prospect of success. From my own personal observation I am satisfied that the ulcers which terminate most frequently in the formation of an intestinal fistula are of a tubercular character. I have observed a number of such instances.

The clinical course in such cases is almost typical. The localized peri-intestinal process is usually preceded by symptoms which point to a chronic catarrhal or ulcerative enteritis. A painless, cold abscess appears at the point where the perforated bowel has become attached to the abdominal wall. The abscess develops insidiously and progresses very slowly. If the abscess opens spontaneously or is incised, it contains, as a rule, no fecal material. The fistula forms later, or is produced at once if the granulations lining the abscess wall are scraped away with a sharp spoon. The communicating opening between the lumen of the bowel and the abscess cavity is temporarily blocked with granulations which, when removed or when destroyed by suppuration and degeneration, establish the fistula through which gas and fecal contents escape. In one case I found such an abscess in the umbilical region, and in another in the right linea semilunaris. In both cases a fecal fistula was established, and the patients eventually died from the effects of the primary intestinal infection. Such fistulae hasten the fatal termination and are not amenable to successful surgical treatment. Tubercular abscesses in communication with a perforated intestinal tubercular ulcer should not be incised. The proper treatment for such cases is tapping of the abscess, followed by injection of iodoform emulsion, a form of treatment which will postpone, if not prevent, the formation of intestinal fistula. König is of the opinion that in many cases of tubercular intestinal fistula the primary disease starts in the peritoneum, resulting in perforation of the intestine from without inward. In such cases multiple fistulae are often established in rapid succession.

STRANGULATION. The functional disturbance of the intestine following strangulated hernia, terminating in gangrene without treatment or under conservative measures, will depend upon the extent of loss of mural tissue, and will vary from a

small fistula only large enough to permit the escape of gas to a perfect artificial anus. Occasionally such an accident follows the reposition by taxis of a damaged intestinal loop. The Littre, femoral and properitoneal herniæ are most likely to be overlooked by the surgeon, and consequently most frequently give rise to this complication.

FOREIGN BODIES. Perforation of the intestinal wall by a foreign body, preceded by a circumscribed plastic peritonitis, frequently results in the formation of an abscess which, when it reaches the surface or an adjacent hollow organ, is followed by an intestinal fistula. Small, slender foreign bodies, such as needles, pins and fish bones, often perforate the intestinal wall and find their way to the surface or into neighboring organs without giving rise to an intestinal fistula. In one case I removed four fish bones from a small abscess in the median line below the umbilicus, after which the abscess healed promptly and permanently. The foreign bodies which are most frequently found in abscesses preceding intestinal fistula are sharp fragments of bone, gall stones, and enteroliths.

MALIGNANT TUMORS. Malignant tumors may cause intestinal fistula either by producing obstruction followed by distention and ulceration on the proximal side or by directly implicating the intestinal wall. The latter mode of origin is the most common. The malignant tumor in such instances invades by contiguity the part or organ which becomes the seat of the intestinal fistula, and at the same time perforates the intestinal wall, so that the fistula is surrounded everywhere by malignant tissue. Carcinoma more frequently pursues such a course than sarcoma. Infection of the malignant tumor with pus microbes plays often an important role in such cases. The supperative infection often overshadows the malignant disease so completely that the surgeon is misled in his diagnosis, and institutes treatment appropriate for abscess when the operation reveals a malignant tumor as the foundation of the difficulty. Carcinoma of the cecum complicated by suppuration has been repeatedly mistaken for appendicitis. Carcinoma of the sigmoid flexure and cecum occasionally results in a pathological anastomosis between the affected part of the bowel and an adjacent loop of the small intestine. Carcinoma of the upper part of the rectum only too often invades the bladder and results in the formation of a recto-visical fistula. Carcinoma of the stomach and transverse colon has resulted in pathological grastrocolostomy.

ACTINOMYCOSIS. A number of cases of intestinal actinomycosis have been recorded in which the disease in its course perforated the intestinal wall and gave rise to diffuse abscesses and intestinal fistula. The ileo-cecal region is the favorite locality for such processes. In the only case of this kind that came under my own observation the disease originated evidently in the ileo-cecal region, but the abscess reached the cavity of Retzius and was opened in the median line above the pubes.

PELVIC AND ABDOMINAL ABSCESSES. By far the most frequent cause of intestinal fistula is pelvic and abdominal abscesses. Such abscesses sometimes are caused by migration of pyogenic microbes through a damaged or inflamed intestinal wall, perforating later the intestines, and finally open or are incised on the surface when the fistula is completed. The fistulous tract is often long and tortuous. More frequently a pyosalpinx or acute phlegmonous abscess of the parauterine connective tissue pursues such a course. Such abscesses open most frequently into the rectum, bladder, and intestinal coils upon the floor of the pelvis, but they may open into the cecum and sigmoid flexure. Externally they point most frequently in the groin, but they may also reach the surface through the sacro-sciatic notch and occassionally extend to the lumbar region. The external fistulous opening may be found in any of these localities. Not an infrequent cause of intestinal fistula is tubercular abscess resulting from tubercular spondylitis and tuberculosis of the pelvic bones. In some cases the abscess is discharged first into the cecum or rectum; less frequently into other parts of the large and small intestines, and later reaches the surface; or the fistula forms in the course of suppurating tubercular tracts. Rectal insufflation is an exceedingly valuable diagnostic test, not only for the purpose of ascertaining whether or not the fistulous tract communicates with the intestine, but also in demonstrating the exact location of the intestinal perforation.

APPENDICITIS. Appendicitis is the most frequent cause of intestinal fistula in the illeocecal region. The fistula is produced in one of two ways: 1. Sloughing or perforation of the appendix. 2. Rupture of an abscess of appendical origin into the secum or adjoining intestinal loops, with the subsequent formation of an external opening. If the entire appendix is cast off as a slough with the contents of the abscess in gangrenous appendicitis, the fistulous opening involves the cecum and occupies that part of the bowel to which the appendix is attached. Clinically such a fistula resembles a cecal fistula produced by other causes. In partial gangrene of the appendix and perforation of the organ, treated upon the expectant plan by incision and drainage without removal of the appendix, if a fistula persists, the remaining lumen of the appendix communicates with the cecum on one side and the external fistulous tract on the other. The fistulous opening into the bowel under these circumstances is so small that seldom anything else but gas escapes. Such fistula occasionally heals; spontaneously in the course of a few weeks; but after it has become well established, closure of the fistula without operation is not to be expected. A paratyphlitic abscess rupturing into the cecum often terminates into a permanent cure, but sometimes it results in extensive destruction of the cecal wall followed by the formation of a correspondingly large fistulous opening. The location of the cecal opening will vary according to the situation of the abscess. The cases of cecal fistula which have come under my own observation involved either the anterior or posterior wall; but they may affect any part of cecum, and occasionally the abscess ascends in the direction of the ascending colon, which it may peoforate and cause a fistula of this part of the large intestine. I have seen three cases of fistula of the cecum following appendicitis in which the opening of the abdominal wall and cecum was large enough to insert three fingers. In all these cases the fecal current was arrested at the opening by the presence of an effective spur formed by the projection of the opposite wall toward the opening in the cecum. It is in cases of this kind, if the abscess has been opened by the surgeon, that he is credited by the patients and friends with having cut the bowel, when in reality the intestinal opening either was present at the time the operation was made or occurred later by sloughing of the inflamed cecal wall.

INJURY OF BOWEL DURING ABDOMINAL AND PELVIC OPERATIONS. Under this head it is not my intention to discuss those gross lesions of the intestines occurring during abdominal and pelvic operations which the surgeon recognizes at once and resorts to the necessary treatment. I wish more particularly to refer to overlooked and incomplete wounds of the bowel as causes of intestinal fistula. Modern gynecology encourages heroic attempts in the removal of abdominal and pelvic tumors that only a few years ago would have been regarded as inoperable by the boldest surgeons. The removal of adherent tumors and pus tubes brings the operator often in very close contact with the intestines. The inflammatory processes which have produced the firm adhesions have often resulted in great damage to the adherent part of the intestine. The intestinal wall, from pressure, cicatricial contraction, and impaired nutrition, is often found not much thicker than ordinary writing paper, hence exceedingly liable to be torn during the separation of firm adhesions. The intestine attached to a tumor or pelvic abscess by firm and old adhesions has lost its outer or peritoneal coat over an area corresponding with the extent of the adhesions. Unless the surgeon practices the necessary precaution of making the detachment at the expense of the tumor or tube, if he does not tear an opening into the bowel he will, at least, seriously damage the intestinal wall. I have no doubt that in numerous instances of this kind surgeons have overlooked minute perforations in the bowel which, if they did not result in fatal septic peritonitis, became the direct source later of an intestinal fistula. It must also be remembered that a greatly damaged intestinal wall is permeable to pyogenic microbes, and consequently becomes not infrequently the sole cause of a late infection after laparotomy, and if the patient survives, of abscess and intestinal fistula. Every experienced surgeon will recall to his memory such mishaps when he could assure himself that in other respects the operation was faultlessly performed. The examination of detached intestinal loops for perforations or other serious damage should not be postponed

until completion of the operation, as it may be impossible to find them again at that time. The inspection should be made at once and all defects remedied before additional adhesions are separated. By pursuing such a course, and by detaching the adhesions at the expense of the part to be removed, we will hear less in the future of septic peritonitis, abscess and intestinal fistula arising from this cause after laparotomy.

LIGATURES. In small wounds and limited gangrene of the bowel Astley Cooper made a small cone, the apex of which corresponded with the injury or disease, and applied a ligature of fine silk around the base. The ligature cuts its way into the lumen of the bowel during the time the resulting defect becomes sealed by plastic lymph. We can readily conceive under what circumstances such a procedure would prove safe and efficient. If the parts included in the ligature and the ligature itself are aseptic the formation of a fistula is prevented by the production of new tissue around the ligature and included mass before the ligature reaches the lumen of the bowel. If, on the other hand, the asepsis is not perfect, and suppuration occurs in the track of the ligature, an intestinal perforation is very likely to ensue.

After separation of an adherent intestine bleeding points are often tied with silk. Isolation of the bleeding vessel is usually out of question, and more or less of bowel tissue is included in the ligature. It must not be forgotten that under such conditions the bowel has been deprived of its peritoneal investment, and consequently the facilities for encapsulation of the ligature are diminished. If to this is added an extremely attenuated bowel wall, it is not difficult to understand in what way a ligature may sometimes give rise to a late perforation, peritonitis, abscess, and intestinal fistula.

SUTURES. Careless suturing of the abdominal incision is responsible for many accidents to the intestines. Undue haste in completing this part of the operation is often severely punished. Unless the operator resorts to proper precautions the needle may transfix a part of the circumference of the small intestine; on tying the suture the loop is anchored against the external incision, the ligature later cuts it away through the included part of the bowel, and if a fatal peritonitis does not result an intestinal fistula is sure to follow. I have seen two cases of intestinal fistula, in the practice of distinguished surgeons, where I had reason to believe that the intestinal fistula had such an origin. But this is not the only way in which sutures have produced this complication. In tying the sutures a loop of the underlying intestines may be caught between the suture and the abdominal wall, and on tightening the suture strangulation results, followed by intestinal obstruction, gangrene of the strangulated part of the bowel or coil, abscess and fistula. Again, an intestinal coil may escape between the sutures and become strangulated between the margins of the wound with similar consequences. It is time that surgeons should recognize the suture as a cause of such complications and resort to efficient prophylactic measures. I am strongly convinced of the value of a separate row of buried absorbable peritoneal sutures in closing the abdominal incision, both for the purpose of guarding against accidents to the intestines and as a prophylactic measure against ventral hernia. Whenever it is possible the omentum should be drawn downward far enough to cover the entire length of the incision. The use of the aseptic compress as an aid in suturing the external wound is so well known that it is only necessary to mention it in connection with my subject.

DRAINAGE TUBES. The last, but by no means the least important subject which I shall discuss in connection with the etiology of intestinal fistula is the drainage tube. Prolonged tubular drainage with glass or rubber tubes is a well-known factor in the production of intestinal fistula. The opening in the bowel is produced by pressure atrophy. I am inclined to believe that the elastic pressure caused by rubber drains is more injurious than that exerted by glass tubes. Long-continued tubular drainage for suppurative lesions is more dangerous in this respect than similar methods of drainage for parenchymatous oozing or other aseptic pathological conditions. In the former case the suppurative inflammation along the drainage canal adds to the destructive effect of pressure. It will be difficult, if not impossible, to entirely eliminate this etiological element by any amount of care

in cases requiring long-continued tubular drainage. In recent cases necessitating drainage for a few days I have been in the habit of surrounding the glass or rubber drain by a few layers of iodoform gauze, for the purpose of diminishing the harmful effects of localized pressure. In drainage for suppurative affections it is advisable to gradually reduce the size of the tube for the same reason, and whenever practicable interpose between the intestine and tube a few layers of iodoform gauze.

TREATMENT. The treatment of an intestinal fistula must have for its aim closure of the abnormal opening with as little interference as possible with the lumen of the bowel. The statement has been made, and is borne out by clinical experience, that many intestinal fistulæ close spontaneously. This favorable termination may be expected in cases in which the opening in the bowel is small, the immediate cause of a benign and temporary character, the general health of the patient not much impaired, and the fistulous opening in the bowel so located that it can readily become attached to the parietal peritoneum or the serous investment of an adjacent organ. The spontaneous healing of an intestinal perforation is always followed by permanent parietal or visceral adhesions. In fistulæ resulting from tuberculosis, malignant disease, and actinomycosis, spontaneous healing from the very nature of the primary cause, is out of the question, and in the majority of these cases operative treatment with a view of closing the fistula is contraindicated. The operative treatment in such cases deserves consideration only in the event that the primary cause can be completely eliminated before an attempt is made to restore the continuity of the bowel. In fistula caused by malignant disease, in which the extent of the primary cause has rendered a radical operation inapplicable, it may be advisable to secure rest for the diseased part of the intestine by establishing an artifical anus on the proximal side. In the treatment of tubercular and actinomycotic fistulæ the primary disease must receive proper attention, and, in case it is amenable to successful treatment, the fistula will heal spontaneously or is subjected later to appropriate surgical treatment. Before I proceed further to the discussion of the surgical treatment of intestinal fistula it is important to refer briefly to a few of the more important points of the

PATHOLOGICAL ANATOMY. For the sake of simplicity I will describe the different forms of intestinal fistula as we observe them on the surface of the body, although the same remarks will apply to the internal fistulæ where similar conditions are developed.

INTESTINAL FISTULA. Intestinal fistula as defined in the introductory remarks of this paper presents itself in one of two forms: 1. A fistulous tract leads from the surface to the opening in the intestine. 2. The mucous membrane of the intestine lines the fistulous tract and is continuous with the skin on one side and the mucous lining of the intestine on the other. In the first variety the opening in the bowel is more or less distant from the surface, and the tract is lined by granulations. In the second variety the intestinal wall reaches the surface and the margins of the opening in the bowel form the border of the external opening, the entire fistulous tract being lined by mucous membrane. In both instances the opening in the bowel is lateral, the intestinal tube either straight or slightly curved, presenting no mechanical impediments to the fecal current.

ARTIFICAL ANUS. The interruption, partial or complete, of the fecal current at or in the immediate vicinity of the fistula is usually due to one of three causes: 1. Intestinal obstruction below the fistula. 2. Flexion of the bowel at a point corresponding with the location of the fistula. 3. The presence of a spur opposite the opening in the bowel. If perforation of the bowel takes place in consequence of an intestinal obstruction, the cause or causes which have given rise to this accident maintain the obstruction and all of the intestinal contents escape through the fistula, which then serves the purpose of an artifical anus. If the perforated part of the bowel becomes flexed by adhesions or otherwise, the flexion narrows the lumen of the bowel and directs the fecal current toward the abnormal outlet. Under such circumstances a considerable part of the intestinal contents necessarily escapes through the fistulous opening. If the flexion becomes more acute the intestinal wall opposite the opening forms a spur which when fully developed completely

intercepts the fecal current and transforms the fistulous opening into an artifical anus.

From these remarks it necessarily follows that spontaneous healing can only be expected in cases in which the fistulous tract is not lined by mucous membrane and in which the fecal current meets with no impediment by flexion or spur formation. As the fistulous opening in the bowel is often beyond the reach of an examination to determine the actual conditions, time plays an important part to enable the surgeon to determine whether or not surgical interference is necessary. In the absence of an indicatio vitalis an operation should be postponed until the clinical course has demonstrated that Nature's resources are inadequate to accomplish the desired object. An early operation is demanded if the fistula involves the upper part of the small intestines and the escape of chyle endangers life from inanition. In the absence of such an indication, and in the absence of positive proof that spontaneous healing is impossible, conservative treatment should be continued until the indications for a radical operation are established. A carefully selected diet, attention to the condition of the bowels, rest, compression over the fistulous tract, and antiseptic treatment of the suppurating tract embrace the leading indications of the expectant treatment.

Surgical Treatment. The surgical treatment must be governed by the pathological conditions which characterize each individual case. A careful inquiry concerning the etiology and pathology in each case is therefore necessary in order to enable the surgeon to select the appropriate therapeutic resources.

Cauterization. Cauterization of the fistulous tract is useful not only in expediting spontaneous healing in cases in which such a result is to be anticipated, but also for the purpose of removing anatomical conditions incompatible with such a determination. Nitrate of silver is most efficient in stimulating the process of repair in cases in which the tract is lined by flabby, infected granulations. Benefit from this agent can only be expected if it can be applied the whole length of the canal. Its application is worse than useless if the entire tract is not accessible either on account of its length or tortuous direction. If the fistulous tract is lined by mucous membrane, is short and readily accessible in its whole length, the Paquelin cautery can be resorted to with advantage. The cauterization must be made deep enough to destroy the entire thickness of the mucous membrane. On separation of the tubular eschar the fistulous opening is enlarged, and for a time more of the intestinal contents escape through it; but in a short time the canal becomes blocked by granulations, which eventually result in its closure. Before using the cautery the length of the tract must be carefully determined, in order to protect the bowel against injury from the point of the instrument. The same instrument is of value in the treatment of larger fistulæ lined by mucous membrane not complicated by mechanical impediments to the fecal circulation. I have resorted to this procedure in a number of cases of surface fistulæ lined by mucous membrane, and have been well satisfied with the results.

Drainage of Abscess Cavity. An abscess cavity interposed between the intestinal opening and the fistulous tract on the surface or in one of the pelvic organs, constitutes often an insurmountable obstacle to spontaneous healing. In many such cases the abscess cavity is imperfectly drained and is being continually contaminated by fecal material. If the abscess is so located that it can be safely and more efficiently drained, such a procedure will often accomplish all that is desired. This method of procedure is particularly indicated in the treatment of pelvic abscesses complicated by intestinal fistula. It must, however, not be forgotten that under such circumstances the organs in the vicinity of the abscess are often displaced by inflammatory adhesions and exposed to injury in efforts to secure better drainage.

Mechanical Repression of Spur. The spur has been recognized as a cause of the persistence of intestinal fistula for a long time, and different methods of treatment have been devised for its removal. Desault advised the insertion of a roll of charpie into the bowel with a view of increasing the size of the lumen of the bowel and of repressing the spur. Banks inserted a large rubber tube, which he fastened in the fistula, for the same purpose. As the formation of the spur takes place in consequence of the flexion of the bowel, we can readily understand why all such mechanical devices have proved of so little value.

REMOVAL OF SPUR. The first efforts to remove the spur by operative procedure were made by Schmalkalden in 1795. He removed the spur with scissors and knife. The disastrous results which must have necessarily followed this operation led Dupuytren to accomplish the same object by a bloodless method. He devised for this purpose a clamp, which he applied to the spur, and by tightening the screws connecting the branches made it cut its way through the tissues by causing linear necrosis of that part of the septum included in its branches. The instrument effects its object in from three to eight days. It is then again applied on the side of the linear section, and the same procedure is repeated until the spur is removed. The results of this operation were quite satisfactory before laparotomy was made a safer procedure.

In 1824 Dupuytren reported forty-one cases, of which number twenty-nine were cured and only three died. Later Heiman collected eighty-three cases with a mortality of 4.83 per cent. The most recent statistics collected by Körte comprise 111 cases with eleven deaths. In many of the cases, however, the fistula remained. After the removal of the spur the margins of the fistula were usually destroyed with the actual cautery. I shall show further on that the spur develops in consequence of flexion, and that if the flexion is arrested in the operative treatment of artificial anus its removal is superfluous. The recent advances made in intestinal surgery will render Dupuytren's operation obsolete in the near future.

CLOSURE OF FISTULA BY PLASTIC OPERATION. The closure of the intestinal fistula by plastic operation was introduced by Diffenbach. It was not his intention, by the operation which he devised, to close the opening of the bowel at once, but to cover it with a bridge of skin, leaving the closure to be accomplished later gradually by granulation. Between two elliptical incisions he excised the margins of the fistulous opening and the skins surrounding it. A bridge of skin is made by making on one side of the oval defect, and the necessary distance from it, a curved incision twice the length of the wound, and, by undermining the skin, a bridge is formed with which to cover the opening. The oval wound is closed by interrupted sutures. The operation leaves a crescent-shaped raw surface produced by sliding the bridge, which was left open to heal granulation. This operation, as well as plastic closure by pedunculated flaps, had their field of usefulness before addominal operations were rendered comparatively safe by an approved technique and the general adoption of aseptic precautions, but are seldom, if ever, resorted to at the present time.

SUTURING OF FISTULA WITHOUT OPENING THE PERITONEAL CAVITY. The closure of an intestinal fistula by vivifying its margins and suturing, without detaching the bowel or opening the peritoneal cavity, has not yielded very satisfactory results. The operation is only adopted for cases in which the intestine is attached to the abdominal wall and the fistulous opening is readibly accessible, and where no canalization impediments are present. I have succeeded in two cases in closing the fistula completely and perfectly by one operation.

In advising a resort to this, as far as life is concerned an absolutely safe operation, I must insist in the first place upon the necessity of freely excising the fistulous tract, removing all of the scar tissue and a circular strip of the mucous membrane lining the margins of the fistulous opening in the bowel, as well as the importance of bringing in accurate apposition the different anatomical structures by several tiers of buried sutures. A conscientious observance of these precautions will frequently reward the surgeon with success in closing an intestinal fistula by extra-peritoneal suturing.

INTESTINAL ANASTOMOSIS. The formation of an intestinal anastomosis in the treatment of an intestinal fistula is indicated in cases in which the extra-peritoneal methods are not applicable or have proved unavailing and the usual intra-peritoneal operations are contra-indicated. Under such circumstances the exclusion from the fecal circulation of the perforated loop by the formation of an anastomotic communication between the afferent and efferent limbs of the loop, will remove the annoyances incident to an intestinal fistula and place the parts in a more favorable condition for spontaneous healing or more successful surgical intervention. The anastomotic opening should be made at least two inches in length. The operation can be

performed most safely by the use of decalcified perforated bone plates or by Czerny-Lembert sutures.

ENTERECTOMY. The mortality attending enterectomy and circular enterorrhaphy in the treatment of intestinal fistula and artificial anus remains great even in the hands of experienced operators. The statistics of Reichel give a mortality of 37.8 per cent., and those of Hertzberg 27 per cent. In view of this fact it is apparent that this operation should be reserved for cases not amenable to successful treatment by safer procedures. I am confident that the indications for this operation can be limited to exceptional cases. If the intestine is not attached to the abdominal wall, it is much safer to open the free peritoneal cavity in search for the affected part of the intestine than to follow the fistulous tract as a guide. If possible, the intestine should be tied on each side of the fistula with a strip of gauze or a rubber band before it is detached, in order to guard more efficiently against fecal extravasation. The operation should be performed with the patient in the Trendelenburg position and the peritoneal cavity amply protected by aseptic compresses during the resection and suturing. After the resection the continuity of the bowel should be restored by circular enterorrhaphy by Czerny-Lembert sutures.

PRELIMINARY TRANSVERSE SUTURING OF THE INTESTINAL OPENING AS A PROPHYLACTIC MEASURE AGAINST INFECTION DURING THE OPERATION FOR ARTIFICIAL ANUS. There can be but little doubt that the operative treatment of intestinal fistula or artificial anus requiring opening of the abdominal cavity has been attended by an alarming mortality, owing to infection caused by the escape of feces through the intestinal opening. Packing the opening with gauze or cotton is a very inefficient way in which to prevent fecal extravasation. The use of clamps and ligatures on each side of the opening in the bowel is equally unreliable. It appears to me the only safeguard against this course of danger is preliminary closure of the intestinal opening by suturing, placing the sutures so close together as to absolutely prevent the escape of any of the intestinal contents. After this has been done the field of operation is once more thoroughly sterilized before the abdomen is opened and the intestine detached. The sutures should include all the tunics of the bowel. With few exceptions this row of sutures will remain as Czerny sutures, to be buried after the bowel has been detached by Lembert stitches. I have already made a statement that I look upon flexion of the bowel as the most important factor in producing the spur, and that measures which are calculated to correct the flexion will prove useful in removing the spur. In artificial anus, produced accidentally or intentionally, the flexion is caused by the prolapse of the intestinal loop into, and sometimes even beyond, the opening in the abdominal wall. If the intestine is detached the flexion is diminished or completely corrected, and its recurrence is prevented by transverse suturing of the intestinal opening. A study of my cases has convinced me that the provisional closure of the intestinal opening by transverse suturing before using the knife is the most efficient prophylactic measure against infection, and that resection of the intestine for fistula and artificial anus can be avoided in the majority of cases, and that in its place transverse suturing and correction of the flexion will yield better results.

TRIONAL.

CHARLES H. SPRINGER, M. D., PH. D., CLEVELAND, OHIO

I have used trional in a number of cases and found it, unlike any of the sedatives in common use, filling a place for which the pharmacopeia offers no other remedy. Having no anodyne properties, it is a hypnotic *par excellence*.

While opium acts by its benumbing influence upon pain, trional, where pain was absent or relieved by other remedies, relieves the nerve tension, quiets the "in a hurry" feeling, soothes the overwrought nervous system into a state or condition in

which natural sleeps follows, causing no nausea, dullness, derangement of the digestive organs, nor any skin eruption. The patient arises after from five to ten hours sleep with a ravenous appetite.

I do not remember reading of two noteworthy effects from the administration of trional:

First, on awakening, the patient does not have that longing for his morning drink, always noticed in other cases, and does not have that "hollow" feeling in the stomach; and, second, morphine or opium retards the action of trional. The patient in all cases has less tremors and no headache. I have never seen any unpleasant symptoms from the largest doses—grs. xxx. every hour until three doses were taken.

I usually administer the trional in capsules or "konseals." For simple insomnia, grs. xv., one hour before retiring, and the same amount on retiring, if necessary, is the usual quantity I prescribe. This method has given me the best results, and in twenty-one cases, with but one exception and that only for a night, the patients awoke much refreshed after sleeping from five to ten hours.

The following cases will show my plan of treatment and the results obtained:

Case 1. Insomnia, general nervous prostration and phosphaturia. Had not had two hours sleep at any time for more than a week. Trional in grs. xv., doses one hour before and on retiring and every hour until asleep, gave immediate relief. The first night three doses were given, which secured seven hours sleep; after this two doses each night secured from five to seven hours natural sleep, for one week. Since, the patient has taken only grs. xv. each night, and has not lost a single night's sleep in sixteen days.

Case 2. Insomnia, nervousness and enteralgia from an ulcerated colon. Ordered trional, grs. xv. with grs. v. each of phenacetine and acetanalid. The patient slept very well every night it was used.

Case 3. Insomnia, tremors and general nervousness or exhaustion from a protracted spree. Has been drinking large quantities of alcoholic liquors. Ordered grs. xv. trional every hour from 7 P. M. until asleep, and the following:

℞ Potassii bromidi ..... ʒ iii
Ext. cocæ Fluidi.. ..... f ʒ i
Celerinæ..... f ʒ ii

M. Sig.: Take one teaspoonful, in water, every hour tonight and every two hours tomorrow.

After nine hours sleep, he awoke tranquil in nerves and much refreshed, though weak. After a dose of the bromide he ate a hearty breakfast and by continuing the bromide and the acetanilid co. capsules, alternating every hour, had no longing for drink, no nausea, and was able to attend to business in the afternoon.

Case 4. Cocaine habitue having insomnia. Ordered grs. xv. of trional one hour before and upon retiring. This was the only remedy that successfully produced a refreshing sleep for him out of the many tried unsuccessfully.

I have used it as an anhydrotic with more satisfactory results than any other I have ever tried. I believe after a thorough trial that trional is a safe and reliable hypnotic and an anhydrotic of great value. It never causes any unpleasant symptoms, and for hypnotic and anodyne effect is best administered in conjunction with phenacetine or acetanilid.

THE CONTAGIOUS ASPECT OF PULMONARY TUBERCULOSIS.*

A. M. COOPER, M. D., Point Pleasant, Pa.

As there is so much being said and written about the contagious nature of pulmonary tuberculosis, I turned to my experience and observations for almost four decades to see if I could satisfy myself which side was tenable; I confess I was somewhat skeptical about the contagious nature of the disease before I investigated the matter and am more so now. However, my mind is open to conviction and change of opinion, whenever facts, sufficient, are presented to warrant the change.

The late Prof. J. K. Mitchell used to tell the class, that, where the consort was taken with consumption and died, the surviving partner was more likely to follow

* Read before the Medical Society of the State of Pennsylvania, 1894.

with the same disease than under any other circumstance in life. The intimate relation that existed between husband and wife, the well one was much more likely to become *infected* than under any other relation or condition. The word *contagion* was not thought of forty years ago in this connection.

I collected all the cases that I had attended, professionally, or who had come under my personal knowledge and observation and I found fifty-five such cases, when husband or wife had died of tuberculosis of the lungs with the following results to the remaining consort.

Fifteen husbands died of consumption of this number, and their wives are still living and well. Some have since remarried. One husband died about one year ago; one, three years ago, and the remaining thirteen from six to thirty years ago.

Of the above fifty-five cases, twenty-five wives died of consumption of the lungs and their husbands are alive and well now.

All these wives have been dead over six years, and some of them over thirty years.

Three husbands died of consumption and their wives lived many years thereafter, (one over thirty), and died of *old age* or some other disease.

Seven wives died of consumption and their husbands all lived to die of some other disease, and all died more than ten years after their wives.

Mr. M—— died April 17, 1870, of consumption, and his wife died of the same disease March 28, 1884. The wife following the husband fourteen years after his death from the same disease. Rather a long stage for incubation.

Mr. S—— died of consumption in the fall of 1872. Hsr husband afterwards remarried and died of the same disease in the spring of 1880—eight years later. The second wife has since remarried and is yet living and well. One case more which is peculiar.

Mr. and Mrs. B—— were married in 1871. She was not strong. He able to work, but coughing. She gave birth to twins August, 1872. The children lived a short time and both died, she never regaining her former health, but developed consumption in its rapid form and died in January, 1873. The husband died two or three years later from consumption, which had been of long standing. Mrs. B——, on her mother's side was from a consumptive family. As far as I know it did not exist in his family.

The last case is the only one in the fifty-five where there could have been any contagious influence exerted and that remains extremely doubtful. I am yet inclined to the opinion that heredity has more to do in the causation of pulmonary tuberculosis than anything else. I care not whether the germ of the disease is inherited or the productive soil, a fit and proper habitat for their implantation, development and multiplication, the fatal effects of the disease will be the same.

CORRESPONDENCE.

DR. LONGSDORF AND CHRISTIAN SCIENCE.

MR. EDITOR:—In THE MEDICAL AND SURGICAL REPORTER for September 1, appears a criticism of Dr. Longsdorf's paper on "Christian Science," by Dr. J. Newton Hunsberger. While I most emphatically do not agree with the critic, yet I am glad in one sense that he wrote it and that THE REPORTER published it. Glad because the discussions of the papers read before the State Medical Society are never published, and these discussions, as in all medical societies, are often of as much value as the original papers. It would be of advantage many times if papers published in THE REPORTER, as well as in other medical journals, were taken up for "further remarks" by practitioners. It adds not only value, but interests one intensely in the subject, care being taken to remember that of all men doctors should be honest, fair and liberal.

In discussing Dr. Longsdorf's paper before the State Society, I took the ground that its valuable information would be of more importance in an educational sense to the laity, than to the profession. It is

evident, however, from Dr. H.'s criticism that some of the profession need to read it very carefully, more carefully, I am afraid, than the critic, Dr. Hunsberger has done. Had he "caught onto" the information given, and the real object of the paper, he would not have been so harsh and unkind as to call our good, womanly, gentle Dr. Longsdorf, "unjust, inhuman, selfish and cowardly." That is certainly not very professional, not to put it stronger. I can see her yet, standing timidly and modestly before the bald heads and gray beards, the middle aged conservatives and young enthusiasts that filled the old church on Walnut street, and I cannot possibly imagine any one of them yelling at her, "unjust, inhuman, selfish, cowardly," as she quietly finished. I am glad that in place of that, she received the cordial applause that she deserved.

Dr. Hunsberger accuses Dr. Longsdorf of facing both ways, in first "admitting that there were thousands of instances of authentic cures on record as a result of Christian Science," and then, "advising definite restraint" for "these abuses," and suggesting "legislative enactment." Now it happens that Dr. Longsdorf does not admit any such thing regarding "Christian Science," as above quoted. What she does say is this, "It would be out of place to argue against the possibility of *mental* cure." Then, she says, "*thousands of such instances are upon record*," etc. That is a very different statement than Dr. H. quotes, and has a very different meaning.

Prior to making the statement as to *mental* cures, Dr. L. carefully defined what "Christian Science" was by taking the definition *of its own leaders*. She clearly showed that taking *that definition*, "Christian Science" was a delusion, if not a veritable fraud. I think it is clear from her paper, that it (Christian Science) is a case of "the blind leading the blind," and both "falling into the ditch." It really looks as if our friend Dr. H. had slid in along with the rest. Dr. L says in effect the foundation is "belief," and the effect, if any, "mental," and in that way effecting the body physically. That is just the same old route by which the faith cure people, the Indian humbugged, the relic worshipers are effected. If one is *science* so are all.

Let me illustrate it from my point of view. When I was a young fellow, a patient that had been bedridden for years came into my charge. All the "old timers" in that section, had "tried, failed and given up the case." She was as a last resort turned over to the tender care and mercy of the "little doctor," as I was called. I did not know what was the matter with her. I have no doubt the "old timers" did, but they were very careful to not tell me. That woman would groan and moan for a period, and "lie awfully quiet" for another period; she had to be "hand fed" for days at a time, and was, as the head of the family put it, "the most awfullest helpless mortal critter that ever you seed." About that time clinical thermometers were coming into use and mine was a precious instrument to me. One night my patient insisted that she "was burning up," and that I must take her temperature. Taking my thermometer out of its flat case (it was one of those curved affairs fastened to a strip of wood or ivory), I approached the bed. Owing to some carelessness on my part the instrument fell to the floor and with a little bound passed under the bed. Full of anxiety for my new instrument, I grasped the lighted candle—candle seems odd at this day—and thrust it under the bed; it set fire to the "straw tick," and with a yell equal to a Comanche Indian the patient sprang to the floor and out of the room. The "cure" was permanent. Now mark the element of faith, for this old lady was no decendant of Ananias, that good woman declared most positively that it was the last dose of medicine that cured her; that she had only taken it half an hour before my arrival, and had "felt it going all through her body;" that "only for that dose she might have been seriously burnt." Mark again the element of credulity; the little doctor, at *that time*, was idiot enough to try and make himself believe that there really *was something* in her statement.

"Christian Science" (!) could have *cured* that patient.

Again, a woman had been bedridden for years; she was carried in a chair to a religious meeting of an excitable character. In the midst of the exercises the woman got up from her chair and walked across the floor. The "cure" was permanent. The result showed its perfect *naturalness*, as in the

previous case, by the fact of the patient "often giving out in the legs", until time and exercise had restored muscular tone.

"Christian Science" (!) could have cured that case. The fact in both cases being, that the patient could have walked at any time in all those years, *if they had believed that they could.*

Thousands of such cases have been "benefited," "cured," or "*changed their mind*," just as one may choose to designate it, by hundreds of different methods. None of them proof of a science evolved and made known.

If there is anything in its professions, then it applies just as well to a broken bone, a crushed limb, or an ovarian tumor as to a disease of any character that is *real*. These people are very careful to fight shy of that sort of thing, however. Did they confine themselves to cases that mental cures effect, it would not be so bad. But when they stand by the bedside of typhoid fever, diphtheria, scarletina, etc., etc., and talk about "belief," while the patient is fast hastening to the grave, denied intelligent assistance, *then* Dr. Longsdorf is right, and legislative enactment should be sought if nothing else will prevent the sacrifice.

Nor does the fact that they honestly believe in it help the case any. Nor yet does Dr. H. help the cause or his side by quoting, "If ye have faith like a grain of mustard seed ye can remove mountains," or by any appeal to the New Testament. The writer is a firm believer in the New Testament and the healing by the divine Christ, and by those whom He especially endowed. But if in these modern days the so-called Christian Scientists are to demonstrate the power "of faith like a grain of mustard seed," let them begin by feeding a few thousand of our worthy poor on "five loaves and two fishes." The lad with a basket and the needed material for beginning operations can readily be found. In this way they can do a great deal of good and no harm—that is if the theory works out right.

Again, before they begin experiments on the sick, let christian scientists ask and answer this question: "If the *mission* of Christ and His Apostles was that of healers of disease, was not that mission, as a mission, a failure?" If it was *not* the *mission* of Christ and His Apostles to cure disease, then any followers who so assume in His name, assume more than He or His Apostles did, and deceive themselves and others. All that Christ and His Apostles did in that line, was with a special object *above and beyond* the mere healing.

Dr. H. says further: "We are materialists. We look at our patients as mere machines. We forget that they are endowed with souls." Again is he much, very much mistaken. The great majority of physicians are believers in the Christian religion, even those who are not "professing Christians." The great hospitals, the wonderful research, the patient study, the anxiety, the care, the skill, the relief given by great surgeons and physicians as well as by us of the lesser ranks, to the suffering poor, without fee or reward, do not look as if our "patients were regarded as mere machines." Nor do the sacrifices of the profession for others indicate that we forget that we or they "are endowed with souls."

Again he says "we bow down and worship a lot of microbe resurrectionists, who were never in a sick room except that of dogs and guinea pigs, and have them dictate to us the quickest way to obtain a post-mortem." Let me say to Dr. H. that the above statement is not only "unjust—inhuman," but also a bad exhibition of ignorance. The class of doctors he seeks so to belittle have glorified the profession and blessed humanity.

The doctor quotes lastly, "There are more things in heaven and earth, Horatio, than are dreamed of in your philosophy." Let me kindly change it thus, "There are more things in the profession, Doctor, as well as in Dr. Longsdorf's paper than you have "caught onto."

S. S. Towler, M. D.

Marienville, Pa.

The Endoscope in Urethral Stricture.

Dr. McMunn, in a recent article in the *British Medical Journal*, calls attention to the value of the endoscopic tube as a means of aiding the introduction of the filiform bougie in extreme cases of urethral stricture. Passing the tube down through the stricture, the aperture of the stricture is widened out by the stretching of the canal over the end of the tube, or brought into view by the change in the direction of the canal, so that the filiform instrument may be easily introduced.

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SATURDAY, SEPTEMBER 22, 1894.

EDITORIAL.

A BACTERIAL STUDY OF ACUTE CEREBRAL AND CEREBRO-SPINAL LEPTO-MENINGITIS.

While the infectious nature of cerebral and cerebro-spinal lepto-meningitis has long been recognized, the character of the specific bacteria producing them has not been satisfactorily determined.

Biggs (*Wilder Quarter-Century Book*, 1893, p. 316) has recently contributed a valuable article on this subject from which important conclusions have been drawn. His studies were made on adult cases, and in the Springs of 1892 and 1893, during the eight weeks preceeding the first of May. It is during this period that vital statistics show the mortality from acute lobar pneumonia was highest (*i. e.* in the city of New York where these investigations were made); and it is to this disease that both cerebro- and spinal lepto-meningitis seems most closely allied in its etiology.

Of the eighteen cases studied by the author, six were cerebro-spinal, and twelve cerebral lepto-meningitis. In only three of the series was the disease secondary to traumatism, or to disease of the cranial bones or of the soft parts about the head. Of the cerebral cases, one was primary and eleven secondary to some local or general acute infectious process. A bacteriological examination was made in seventeen of the cases. In the twelve cases of acute cerebral lepto-meningitis the bacterial examinations gave the following results:

In one case, pure cultures of the *Anthrax bacillus.*

In one case, *Bacillus coli communis.*

In one case, *B. coli communis and Proteus Vulgaris.*

In four cases, the *Pneumo-bacillus of* Fraenkel.

In two cases, the *Streptococcus pyogenes.*

In one case, the *Diplococcus intracellularis meningitidis.*

In two cases, a mixed infection.

The finding of the localization of the *Anthrax bacilli* in the brain, is of particular interest. The patient was a wool-sorter, thirty-six years of age. He died in eighteen hours after the first symptoms of the cerebral trouble. Upon post-mortem, "the *pia mater* of the brain over both the convexity and the base was studded with hemorrhages, and the meshes of the *pia*

both in the fissures and over the convolutions were distended with sero-pus. Cultures were made from the fluid in the subcutaneous tissue from various portions of the wrist and arm (seat of inoculation), from the heart, blood, spleen, and *pial* exudate on both sides of the brain. In all of the tubes inoculated from the brain, a pure culture of the *Anthrax bacillus* developed. All of the other tubes remained sterile. The media employed and the conditions under which the cultures were made and kept after inoculation, were the same. The identity of the *Anthrax bacillus* was established by microscopical examination, by culture reaction and by inoculation of animals." Cover-glass preparations from the various organs also failed to reveal the presence of the bacilli, excepting in those from the brain.

The appearance of *Bacillus coli communis* in pure culture in the brain, is also interesting as it furnishes another evidence of the distribution of that organism in the body. It is believed by the author that this bacillus was the exciting cause of the meningitis, as it appeared in pure culture and followed after typhoid fever. The explanation being the migration of the colon bacteria through the intestinal ulcers into the blood or lymph channels, and eventually lodging in the meninges, where they set up an acute inflammation.

The *Pneumo-bacillus* of Fraenkel was found in four cases where the meningitis followed lobar pneumonia. The presence of this bacillus in acute meningitis has been known for some time, and certain writers have been led to the opinion that this bacillus is nearly always the etiological factor in this disease. The results of the author show, however, that other agencies are quite abundant.

An observation of much interest is added by the writer, that he has rarely seen cases of cerebro-spinal meningitis at any other season of the year than during the spring months, and these cases are almost invariably primary and develop suddenly without any ascertainable cause.

The following important statements are made by the author:

1. "Purulent or sero-purulent meningitis is always microbic in its origin.

2. "Many cases of cerebro-spinal meningitis do not differ from cerebral meningitis except in the extent of *pia* affected. The etiological factor may be the same.

3. "Cerebro-spinal meningitis is usually primary.

4. "Cerebral meningitis is usually secondary to some infectious disease and is only occasionally primary.

5. "When the disease is secondary, the cause of the secondary infection may be a different organism from that producing the primary disease.

6. "The following organisms have been previously found in the *pial* exudate in cerebral meningitis: The *Pneumo-bacillus* of Fraenkel, the *Streptococcus pyogenes*, *Bacillus Typhosus*, *Staphylococcus pyogenes*, *Pneumo-bacillus* of Friedlander, the bacillus of '*La Grippe*' and the *Gonococcus*." The authors' observations have added two new ones, *Bacillus Anthracis* and *Bacillus coli communis*.

7. "The *Pneumo-bacillus* of Fraenkel is the most frequent cause of cerebral meningitis.

8. "The latter organism is not infrequent cause of primary cerebral and cerebro-spinal meningitis, the lungs not being involved.

9. "The cases of meningitis due to different organisms do not show such constant differences from each other in the symptoms presented, as to make possible the clinical differentiation as to cause.

10. "The amount of exudation bears no constant relation to the severity of the symptoms.

11. "It is not possible to distinguish with certainty during life, cases of acute cerebral hyperæmia, with or without œdema, from cases of meningitis."

ABSTRACTS.

REVIVAL OF SYMPHYSEOTOMY.

The literature of this subject has in recent years become so voluminous that it would be impossible to find space to do more than summarize the accounts of the most striking work done in Italy, France and Germany, where the operation has been most frequently performed, and has found the most prominent supporters.

Historical.—The operation was first proposed by Sigault, of Dijon, in 1768, and first performed at Naples by Domenico Ferrara in 1774. Ever since then there have been champions of the operation in Naples,* notably Amantea and Galbiati, and in more recent times Spinelli, Caruso and Morisani. The last of these called attention to his operative work for the first time in 1863, and his contribution of facts and opinions on symphyseotomy was perhaps the most remarkable feature of the Gynecological Section's Proceedings at the recent Congress at Rome. Throughout the rest of Europe the operation was entirely abandoned as too dangerous. This result was largely owing to the discussion which took place between Sigault and Baudelocque. In this discussion Baudelocque appeared to bring forward unanswerable arguments drawn from his experiments upon the cadaver, especially proving the absence of increase in the conjugata vera and the occurrence of fraction of the sacro-iliac joints as results of the operation; and though his conclusions were shown later to be erroneous, they were accepted at the time. It was not until great advances had been made towards exact pelvimetry, and antiseptics had been introduced into obstetric surgery, that the results obtained by the Italians were sufficiently encouraging to attract favorable attention in France and Germany, and, curiously enough, it was at the Clinique Baudelocque in Paris, that the most strenuous advocates of symphyseotomy were found.

Symphyseotomy in Germany. — The transactions of the German Gynecological Society at its meeting at Breslau in May, 1893, will perhaps best serve as the basis of a review of the German material up to that date.

Zweifel, of Leipzig, gave an account of his experience, referring to previous papers of his own and of others on the same subject, and frankly admitting that his opinion on the subject had undergone a complete change. He mentioned fourteen cases of symphyseotomy occurring in his clinic. All the fourteen women recovered completely, without any unfitness for exertion. Two of the children were stillborn, or died immediately after birth. He found it impracticable to follow the example of the Neapolitan school, and wait for spontaneous delivery after the cutting portion of the operation. He had to apply the forceps in ten of the cases, but always with the head low in the pelvis. The weakening of the fœtal heart-sounds was in every case the indication for the use of the forceps; and in six of the cases coiling of the cord round the neck of the fœtus was found to be the explanation of the indications.

As to the *technique* of the operation, Zweifel calls attention to the following details. The incision through the skin gives rise to smart hemorrhage, which can be readily stopped. The introduction of the finger behind the symphysis and the protection of the knife in cutting through the cartilage from above downwards are easily effected. Only in one case had he to use the chain-saw, owing to difficulty in completing the incision through the symphisis. Difficulties may arise here, not from ossification, but from obliquity in the direction of the symphisis or irregularity in the form of the pubic bones. When the cartilage is cut through the pubic bones separate about a quarter of an inch, and when the last fibres of the ligamentum arcuatum give way, the distance between the bones amounts to a finger's breadth. Then comes on very considerable hemorrhage, which is very difficult to stop. It is best arrested by the introduction of a tampon with counter-pressure from the vagina. When this has been done the patient may be put back to bed and labor allowed to proceed

* Corradi. "History of Obstetrics in Italy during the 18th century."

for twelve or fourteen hours. In many cases the os is not fully dilated, although the membranes may have ruptured at the time of the incision. When the head is passing through the narrow portion of the pelvis the pubic bones sometimes separate to the extent of 2½ to 2¾ inches. In such cases there is always fresh hemorrhage and the need for additional *tamponnade* to arrest it.

After the completion of parturition, another set of circumstances demand attention. Zweifel says that the old accouchers used to fix a cerviette round the pelvis, and healing took place. He himself had to resort to suture of the bones in eleven cases. He describes the difficulties in the way. He used silver wire and it cut through; he separated the periosteum with a raspatory, and took a larger hold of the bone; and he finally succeeded in bringing the separated surfaces of the symphysis together. He says this proceeding is not difficult, but recommends that it should not be attempted in private practice. It may be sufficient to follow the Italian method of suturing the fascia, and so turning in the feet when the legs are extended as to diminish dragging upon the symphysis. In order to keep the pelvis still and immovable, a special girdle was used at first, but in later cases strips of plaster fixed round the pelvis were found to be as efficient and more comfortable. In three cases in which silver wire was used incontinence of urine came on, and required treatment later. In Sweifel's cases the ability to walk soon returned. There was a slight increase in every case in the transverse diameter of the pelvis.

The puerperium was favorable throughout in only three of the cases, and five of the number were ill, with high temperature, for a long time.

Attention is called to the extensive lacerations of the maternal soft parts, which may be as serious as the injuries to the sacro-iliac joint. Such lacerations occurred in Zweifel's cases once spontaneously, and three times during forceps delivery. Three of the women were primiparæ. Later experience has led many operators to the conclusion that symphyseotomy should not be performed upon any woman during her first labour.

At the same congress Döderlein, also of Leipsig, described and illustrated his observations on certain questions bearing on the operation. He set himself, first, to answer the question, What is the condition of the sacro-iliac synchondrosis when the pubic bones are separated during the operation? The second question to be answered was, Is the amount of room in the pelvis gained by the operation a sufficient advantage to place against the dangers and difficulties of the operation? On the first head he found, contrary to the accepted traditional views of Baudelocque, that in the pregnant woman at full term the sacro-iliac joint does not fracture; there is only a partial tearing of the capsule of the joint and especially of the anterior sacro-iliac ligament. "The joint is opened and the fluid in the joint escapes; if small vessels are torn there may even be an extravazation of blood into the joint. As soon, however, as the pelvis is restored to its proper shape on the completion of labour the injuries are quickly and completely healed if no infection has occurred." On the question of increased space in the pelvis Döderlein proved by experiment that when the pubic bones were separated six centimetres there was an increase in the inlet equivalent to 50 square centimetres, and when the symphysis was separated eight centimetres there was an increased area of the inlet equivalent to 66 square centimetres.

Leopold, of Dresden, had performed the operation four times. He thought it was not an operation for general practice, and was not likely to become so. The upper limit for the conjugata vera is 8cm. (3⅛in.,) and the lower limit 6cm. (2⅜in.) Labour should be allowed to proceed until the os is completely dilated, and then the whole process should be completed at once by the application of the forceps. The greatest possible care must be exercised to prevent laceration of the vagina. Primiparæ should never be subjected to the operation.

The discussion was continued by Chrobak and Schauta, of Vienna; Olshausen, of Berlin; Fehling, of Basel; and others who had done the operation very seldom or not at all. It brought out differences of opinion on various points, such as the relative danger of injuries to the bones and to the soft parts, the need for suture of the bony parts (Knochen-nacht), the relative frequency of pyrexia and symptoms of sepsis after operation, and to what extent symphyseotomy would do away

with the necessity for perforation of the living fœtus.

Such was the state of information and opinion among German obstetricians little more than a year ago.

In the discussion on symphyseotomy, which took place at the International Medical Congress in March last, Leopold and Zweifel among others took part, and the former said that it was his duty to explain the position in the controversy occupied by German obstetricians. He and his colleague, however, brought out the fact that they had not in any way changed their views on controverted points. Leopold still spoke in favor of premature labour practised not earlier than the 34th week, and Zweifel advocated, as formerly, delay after the cutting portion of the operation, so as to avoid the application of the forceps. His cases had now increased to 23, all the mothers were alive, and 21 of the children. There had been no incontinence of urine, no fistula, no serious puerperal affection, but in three of the women walking continued for a long time to be difficult.

Sänger, of Leipzig, joined in the discussion to compare the operation with Cæsarean section. He said his mortality for 12 cases was nil. In general the mortality of the two operations differs little. If we compare the time occupied by the two operations, we find that Cæsarean section takes about an hour, and requires no after treatment, whereas symphyseotomy, according to Zweifel's method, demands about a day, and the after treatment continues for about a year. Symphyseotomy in Sänger's opinion ought to be more limited in its scope, and that of the Cæsarean operation extended.

Symphyseotomy in France.—The revival of symphyseotomy in France chiefly depends upon the clinical work of Pinard. This clinical work is explained and justified by the anatomical and experimental studies of Professor Farabeuf* and of Dr. Varnier.

Up to the time of delivering his address on symphyseotomy at Rome in March last Pinard had performed the operation 36 times, with the result that two mothers and four children died. No accident had occurred in any case during the incision of the symphysis and enlargement of the pelvis. Hemorrhage had always been stopped by using a sponge as tampon. During the extraction of the fœtus in primiparæ laceration of the anterior vaginal wall occurred five times. The tears were not extensive, and gave rise to little trouble. The practice of preliminary dilatation by means of Champetier's bag rendered laceration a rare occurrence. Incontinence of urine continued for a considerable time in one case. In all the cases consolidation of pelvis was complete by about the twentieth day. The after-history, in a considerable number of the cases, showed that the women were engaged at laborious occupations, and did not suffer in any way. One of the women became pregnant about three months after undergoing the operation, and went through normal spontaneous parturition at full term in the *clinique*.

Pinard gives a table showing a comparison between the results obtained in cases of contracted pelvis by the induction of premature labour and by symphyseotmy. In sixty-four cases of the former two mothers and thirty children were lost, whereas in thirty-six of the latter two mothers and four children were lost. The author proceeds to give a *résumé* of the anatomical and experimental researches of Farnbeuf. He begins with the remark, "Ces notions anatomiques sont ennuyeuses." With this opinion most readers will agree. The summary itself is long, and incapable of further condensation. Pinard then gives a carefully detailed illustrated account of his method of operating. He "indicates the method by which the difficulties and dangers of the operative proceedings are to be suppressed."

He finally formulates his conclusions as follows:

1. Symphyseotomy or pubiotomy performed antiseptically is not a dangerous operation.

2. In order to be useful it ought to be complete, and the preliminary separation of the pubic bones ought to be in proportion to the contraction of the pelvis.

3. The operation should be performed only on those cases in which examination and measurement of the pelvis show that separation of the pubic bones to the extent of 2¾ inches will permit the passage of the fœtal head at term.

* "Possibilite et moyens de traiter scientifiquement la dystocie du detroit superieur retreci."—*Annales de Gynecologie*, May-June, 1894.

4. Separation of the pubic bones exceeding 2¾ inches, being capable of producing lesions of the soft parts, should be proscribed.

5. When the contraction of the pelvis is such that separation of the pubic bones to the extent of 2¾ inches will not permit of the passage of the head of the fœtus, recourse should be had to Cæsarean section (Porro's operation.)

6. In case of oblique ovular pelvis, with synostosis of one of the sacro-iliac articulations, when the contraction does not permit of spontaneous delivery, it is best to perform the operation of Farabeuf, that is, ischio-pubiotomy.

He adds the following "general conclusions":

1. Embryotomy, cephalotripsy, and waiting for the death of the fœtus ought to be forever proscribed.

2. Operative enlargement of the pelvis, conducted according to the rules laid down, ought to lead to the abandonment of (*a*) the induction of premature labor; and (*b*) every operative proceeding having for its object to make the fœtal head struggle against osseous resistance which cannot be overcome by the uterine contractions.

Symphyseotomy in Italy.—The work of the German and French obstetricians in symphyseotomy is a mere reflection of that done in Italy, and more especially of the work of Morisani, of Naples. Morisani's first publication, "On the contraction of the pelvis and the indications which appear at the time of parturition," attracted considerable attention to symphyseotomy. It appeared in 1863, and since then numerous papers have conveyed to the medical profession a knowledge of his clinical work and of his opinions. He has also been aided in his advocacy by able colleagues and disciples, who have been active clinical workers and diligent contributors to the literature of the subject. One of the most useful of these contributions was that of Spinelli, "Sulla Sinfisiotomia, annotazioni storiche, critiche e bibliografiche," which ran through several numbers of the *Annali di Ostetricia e Ginecologia* in 1892. Among the numerous addresses and papers of Morisani, one of the most important was a contribution to the same journal in January, 1893, "Per la Sinfisiotomia," in which he gave the statistics and details of fifty-five cases. And now quite recently, at the International Congress, his address on symphyseotomy placed before the profession his most mature experience and reflections.

Symphyseotomy is now rendered a justifiable operation by our clinical experience. We are enabled by it to extract a well-developed child at term through a contracted pelvis with a conjugate diameter of 6-7 cm. to 8-8 cm. (2⅜in. to 3⅛in.) The operation is contra-indicated when the fœtus is dead, or even very feeble. The time for operation is when the pains are in full force and the dilatation of the os is well advanced. If it be objected that with an antero-posterior diameter of 3⅜ in. spontaneous birth is possible, or the forceps may readily complete the parturition, it may be answered that a favorable termination is only exceptional, and that the use of the forceps in such circumstances is "masked cephalotripsy," with this difference, that the ordinary cephalotribe would produce less grave and dangerous injuries to the maternal parts. This conviction, however, should not lead to rash action; in every doubtful case plenty of time should be allowed to the natural forces, and the forceps even may be cautiously tried before resorting to symphyseotomy.

In the employment of version in cases of modern contraction, Morisani has no confidence. The mortality among the children is enormous; Zweifel puts it at 29 per cent.

Two or three combinations of other operations with symphyseotomy are discussed: The combination with induction of premature labour is rejected; the combination with embryotomy in certain rare cases is considered advantageous.

The operative details are easy of execution, and do not involve any danger to the patient worth mentioning. The curved bistoury of Galbiati is not essential. Any knife with a protected point and a narrow, strong blade will do. Morisani has never met with ossification of the symphysis, but admits that a chain saw may be required when there is great obliquity and irregularity of the symphysis. It is essential that the accoucher ascertain that the subpubic ligament is completely divided, and that all the structures of the joint are so cut as not to interfere with the separation of the surfaces. When the thighs are abducted, the separation should extend at once to 4 or 5 cm., and in some

cases even to 6 or 7 cm. As soon as this preparation has taken place Morisani applies the forceps and completes the labour. He justifies this course as against Zweifel's advocacy of delay. When the labour is over the wound is at once closed with silk sutures, which are applied as both deep and superficial. Osseous suture is shown by Morisani's statistics to be unnecessary. He has also given up special appliances for holding the pelvis immoveable. Simple bandaging and tying the knees together suffice for obtaining a perfect cure.

Hemorrhage has never been a troublesome feature in Morisani's operation. *Tamponnement* of the wound has always been sufficient to arrest it. The lacerations of the anterior vaginal wall, spoken of by some, have figured little in the practice of the operators at Naples. They might be altogether avoided if primparæ were not operated on, and if the innominate bones were pushed together towards the end of the extraction so as to support the soft parts.

In comparing symphyseotomy with other operations, Morisani thinks that it does not come into competition with Cæsarean section, inasmuch as one begins where the other leaves off. With a conjugate diameter of less than 6.7 cm., the Cæsarean operation "conserves its rights." He deprecates the resort to abdominal section, with its mortality of 12 per cent. in cases where symphyseotomy should give a favorable result.

As to craniotomy on the living child, the maternal mortality is appreciable, and the balance of advantage lies with symphyseotomy. As to the advantages of induction of premature labour, Morisani has changed his mind. If the deformity of the pelvis be such as to require for the birth of a living child induction at the end of the seventh month, or in the course of the eighth, then symphyseotomy should be resorted to. The results of induction so early are "deplorable." "The great majority of the children die," in spite of all the appliances to keep them alive.

The statistics of symphyseotomy appear to require careful handling. The number of cases collected from various sources is 241, showing a maternal mortality of 11.6 per cent. Some of the deaths were due to causes unconnected with the operation. The result of the 241 operations, as far as the fœtus was concerned, was 186 living children and 55 deaths. Of these deaths it is sought to explain away 25.

Morisani's own results, as published in January, 1893, in the paper already referred to, show 55 cases in the five years from March, 1887, with two mothers and five children lost, a very remarkable maternal mortality for such an operation.

Morisani's final summary does not contain any fresh point, except, perhaps, his insistence upon the disastrous results of operating upon women with pelves contracted beyond the minimum of 6.7 cm. of conjugate diameter.—Sinclair, in *Med. Chronicle*.

Scarlet Fever from Milk.

Dr. Chalmers, of Glasgow, recently reported an outbreak of scarlet fever which was traced to a dairy, one of the milk boys of which had suffered from the disease. It was not proven that the cows had suffered any malady to which scarlet fever could be traced.

Management of the Intestine After Abdominal Section.

Drs. Skene Keith and George E Keith (*New York Journal of Gynecology and Obstetrics*) say:

When the general condition of the patient is fairly good and the abdomen is not distending, and when there is not much colic, let things take their natural course. This advice holds for the great majority of cases.

When the abdomen is distending without a previous state of peristaltic action shown by much colic, and when there is a tendency to vomiting, give the mixture of magnesia until the bowels move.

Treat distention without colic or vomiting by the quinine injections.

Quiet excessive peristaltic action by small doses of morphine given hypodermatically.

For distention following excessive peristalsis give a small dose of morphine followed in a few hours by castor oil or magnesia.

When there is septicæmia, wash out the abdomen as soon as the condition is evident and treat as above.

Do not get into the habit of calling septicæmia shock, exhaustion, or any such term. Be content to believe that some mistake has been make in the antiseptic precautions and that additional care must be taken in future.

CURRENT LITERATURE REVIEWED.

IN CHARGE OF ELLISTON J. MORRIS, M. D., AND SAMUEL M. WILSON, M. D.

ARCHIVES OF PEDIATRICS,

for August. Dr. F. Huber discusses

Congenital Constipation.

He comments upon the slight importance parents give to constipation in infants. When they pay any attention to the subject they give any remedy that they think suited to the case. In addition to the well-known causes—improper feeding, poor quality of milk, faulty intestinal innervation, etc., the author thinks the peculiar arrangement of the colon a direct and rarely recognized cause. The length of the large intestine is comparatively greater in young children than in older ones or in adults, and to accommodate this it must fold back, sometimes several times, on itself, thereby effectually preventing the passage of feces.

When this condition exists and leads to obstruction, the child becomes quite ill, suffers pain, has a terse abdomen, and careful examination is necessary to diagnose properly.

To relieve the condition it is best to use a copious injection, gently administered by a fountain syringe elevated a very little, but it is often necessary to introduce the pipe some distance into the bowel. It may be found necessary to raise the bag to some height, and also to use calomel, oatmeal water, etc. In any case it is necessary to continue the high rectal injections for some time, and to keep the case under constant observation for years.

In the discussion which followed, one of the members taking part seemed to advocate the use of ox-gall. sweet oil, or turpentine, but had not used these remedies continuously in cases.

Dr. Chayles W. Townsend writes of

Hæmorrhagic Diseases of the Newborn,

The author thinks his experience proves the existence of a contagious disease, not dependent in any way on puerperal septicæmia, and causing in infants, usually of two or three days of age, (almost always under seven) hemorrhages from mucous surfaces. This disease he thinks quite distinct from hemophilia, self limited, and when leading to umbilical hemorrhage, invariably leading also to hemorrhage elsewhere.

He proposes a supportive treatment, bathing, etc., and frequently finds it necessary to feed breast milk from a spoon instead of depending on the baby nursing.

In collapse external heat and alcoholic stimulants are useful. Astringents and mineral acids seem worthless.

Dr. John Lovett Morse reports

Five Cases of Gonorrhœa in Little Girls.

These children ranged in age from two years to five and three-quarters. The symptoms were inflammation of the external genitals, more or less discharge, usually painful micturition. Each case showed the presence of gonococci, and no non-specific cases were met with by the author; so that he concludes that valvo-vaginitis in children of this age is usually specific. There was no suspicion of rape in any case, and no satisfactory cause could be assigned except the probable use of bath tubs and towels in common with infected adults.

Dr. B. K. Rachford discusses "The Influence of Venous Congestion on Spinal Reflex Centres." Dr. Francis Huber reports a case of "Congenital Hypertrophy of the Fingers." Dr. Henry Dwight Chapin writes about the "Symptoms of Intestinal Obstruction Without Stenosis." Dr. Irving M. Snow reports a case of "Purpura Hemorrhagica Complicating Lobar Pneumonia." Dr. Charles A. Leale describes a rare case of Tuberculosis and Sarcoma.

ARCHIVES OF PEDIATRICS.

Dr. J. Henry Fruitwright continues his article on

Infantile Scurvy.

The case of a boy nine years old is described; he had lived for some time on salt meat, dry rye bread and black coffee, and complained of what his mother called "growing pains." This boy had oval swellings about the knee, very sensitive to pressure, ecchymoses on the chest and elsewhere, foul breath, alternate constipation and diarrhœa, and began improving as soon as given antiscorbutic diet and treatment.

The author describes the treatment of the disease as follows: The joints of the lower extremity take on an unnatural immobility, resembling a pseudo paralysis, and accompanied by tumefaction and exquisite pain on pressure.

The radjus may be affected, but the most characteristic bone symptoms are the cylindrical swelling of the lower ends of the femur and tibia. The skin covering the swellings is tense, shiny, pale, without local heat, and will not pit on pressure. There is great liability to fracture of the bones near the epiphyses. Fever is not constant. In neglected cases profound anæmia supervenes, subdermal ecchymoses form, and ulceration may result; also epistaxis, enterrhagia, hæmaturia, etc. "Hemorrhages are most common where epiphyseal growth is active," and may occur under the periosteum anywhere, leaving a cast to be found post-mortem.

Scurvy is most commonly mistaken for acute rheumatism, but differs from it in the shape of the swellings. In scurvy these are cylindrical or fusiform, and in rheumatism they are more apt to be lateral or circumferential, with local rise of temperature, and

with local points of tenderness on pressure. In scurvy the swelling is uniformly tender, and white and tense.

Rheumatic purpura might complicate the diagnosis, and if mouth symptoms be absent the therapeutic test might have to be relied on.

It may be necessary to rely on the therapeutic test in cases simulating Pott's disease, etc., but in cases of long standing the symptoms of scurvy should be too well marked to make this at all needful.

Two varieties of purpura somewhat resemble scurvy. In peliosis rheumatica the peculiar joint symptoms of scurvy do not precede the eruption, although pain is a prominent symptom in it.

Purpura hæmorrhagica simplex was once thought identical with scurvy, but the diagnosis lies in the absence of pain around the joints.

In treating scurvy the author relies almost wholly on the diet, excludes all artificial foods, and gives sterilized or pasteurized cows' milk, and, if the child be old enough, fresh scraped beef and baked or mashed potato The juices of the orange, lemon, lime, and apple are very useful. Iron, or the citrate of iron and ammonia are useful to combat the effects of this disease, ergot may be necessary if there be much hemorrhage from the mucous membranes, and other remedies may be required if individual symptoms are marked.

BRITISH JOURNAL OF DERMATOLOGY FOR AUGUST.

Dr. Alfred G. Francis writes of

Elephantiasis Associated With Tertiany Syphilis.

Cases are reported at some length. In one case where, as in the others, the history and scars of syphilis were easily found lymphatic abscesses and then lymphorrhagia occurred a few weeks before death.

In the majority of cases the disease is limited to one limb, and this has usually been the seat of syphilitic ulcers, etc. The enlargement is much less marked than in cases of filarial origin or lymphoid disease, and at intervals becomes the seat of inflammation limited to the affected part, leaving it larger than before. These attacks of inflammation are called elephantoid fever.

The resemblance which these cases bear to the milder varieties of tropical elephantiasis leads to the suggestion that these also are caused by lymphatic obstruction. Although there were no other symptoms it is probable that in the case of lymphorrhagia referred to the abscesses had pierced some varicose lymphatics. No nerve lesion was found in any case so that a trophoneurosis is excluded from consideration.

Syphilis causes elephantiasis frequently, and that when confined to the genitals the enlargement is not entirely due to gonorrhœal secretions is proved by its appearing in males, where the discharge can be proved absent. The author regards the well known connective tissue hypertrophies of internal organs an analogous affection.

Dr. Stephen Mackenzie reported a case where a "papulo tubercular, squamous, and crustaceous syphilide" was partly distributed along a nerve, resembling in this herpes zoster.

THE ANNALS OF GYNÆCOLOGY AND PÆDIATRY

for August. Dr. Henry Parker Newman contributes a paper on

Shortening the Round Ligaments for Uterine Displacements,

giving the results of six years experience with the procedure. The author meets the objections usually urged against the operation, namely, the difficulty of finding the round ligaments, the possibility of breaking them and their absence. His answer to the first is that by his method of cutting down on the inguinal canal directly over the internal ring it is always possible to find the ligament and the danger of breaking it is much less than by the old method of searching with for it among its divergent filaments. He denies that the liagments are ever abseut and also asserts that from experiments on the cadaver he is convinced that they will stand a much greater weight than is likely to be imposed on them by the uterus. His method of operating is as follows: An incision is made an inch and a half or more in length, parallel with Poupart's ligament, directly over the canal of Nuck, which is midway between the spine of the pubis and the anterior superior spinous process of the ilium. This initial step exposes the glistening aponeurosis of the transversalis muscle. Through a single nick in the course of the separated fibres of an aponeurosis the blunt hook may now be passed into the canal and the round ligament, which will be seen as a whitish, slightly flattened, cork-like structure, pulled out. Where the operator is not confident of his ground the author suggests the lengthening of the incision to confirm the identity of the ligament. Or an assistant can draw the uterus backward by a sound or finger, when the tension on the ligament will be seen and felt in the wound. After the ligament on one side is secured the opposite side is also found and the both ligaments are drawn upon, exposing in the canal of Nuck a reflection of the peritoneum surrounding the ligaments like a glove finger. This should be stripped back until the ligament can be drawn well out and the uterus sharply anterverted. This gives a loop of ligament on either side, about four inches in length, to be disposed of by stitching the proximal ends together, and anchoring them firmly to the aponeurosis and walls of the canal by buried sutures, care being exercised to avoid strangulation or disturbance of its nutrition. The wound is closed with one series of silk-worm sutures made to include the walls of the canal, the aponeurosis of the external oblique, and the superficial coverings. Patients are kept in bed three

weeks or more. until firm union of the incised structures has taken place, and precautions against over-exertion or straining of the parts are insisted upon for as many months. Hernia is guarded against by the deep sutures constricting the canal about the internal ring, insuring firm union where most needed. Appended to the paper is the report of a number of cases.

Dr. E. E. Montgomery discusses

Vaginal Hysterectomy,

giving as the indications for the operation the presence of malignant disease, the presence of a number of fibroids in the uterine walls where the hemorrhage is so great as to endanger life, and also procidentia uteri accompanied with ulceration of the vaginal surfaces. He suggests that in the after-treatment, so soon as the patient recovers from the shock of the operation, the upper part of her body be elevated slightly, in order that drainage be favored. The author favors the use of the clamp in preference to the ligature for securing the broad ligaments. "The advantages of the use of the clamp over the ligature have seemed to be the greater rapidity with which the operation can be performed; second, the greater security against hemorrhage; third, the more effective drainage, due to the pressure of the clamp upon the perineum and vagina; fourth, the absence of any foreign body to delay union as a result of infection. After a careful study of the cases which have come under his observation, the writer fails to see wherein there are any contraindications to the use of the clamp that are not more than compensated by the advantages already cited."

Dr. George Tucker Harrison discusses

Hæmatocele Retro-uterina.

The author thinks that the term hæmatocele or, more specifically in its typical form, hæmatocele retro uterina, should be limited to an effusion of blood into Douglas's space, previously shut off from the general peritoneal cavity by pseudo membranes, the result of a previous pelvio-peritonitis, forming a tense tumor which displaces the uterus forward. It should be carefully discriminated from a free effusion of blood into the peritoneal cavity, on the one hand, and an effusion of blood into the connective tissue of the pelvis, constituting an hæmatoma, on the other."

In regard to treatment, he states that he is unable to see the advantage accruing from laparotomy, as the operation adds to the dangers and a necessary accompaniment is drainage through the bottom of Douglas's pouch. He rather would make broad transverse incision at the deepest place of the posterior fornix vaginæ, and then, by blunt scissors, clear the way to the sac. If there is a plain sac-wall, it is sutured above and below to the walls of the vagina. The blood coagula are now removed by the fingers without the use of force. If there is any bleeding, the use of iodoform gauze is indicated. If not, a rubber drainage tube, with the addition of careful irrigation is in place.

Dr. Walter A. Crow contributes a short paper on

Cancer of the Uterus.

Considering the remote results of operative interference, the author quotes the opinions of various authorities and reports a number of successful cases—successful so far as recovery from the operation is concerned but in some instances the disease returned and in others the time since operation is to short to make the cases of any value. He takes the view that cancer in the beginning, as a disease, is purely local and urges on the profession the need of early diagnosis and operative interference.

The remaining papers in this issue are: "Ultimate Results in the Treatment of Backward Displacements of the Uterus," by Pessary, with Especial Reference to the Alexander-Adams Operation, by F. H. Davenport, M. D., published in *The Ameaican Journal of Obstetrics* for July, and reviewed in THE MEDICAL AND SURGICAL REPORTER for September 1st, page 309. "Rupture of the Uterus; Palliative versus Surgical Treatment," by Charles M. Green, M. D., published by *The American Journal of Obstetrics* for July and review in THE MEDICAL AND SURGICAL REPORTER for September 1st, page 308. "Inflammation of the Ureters in the Female," by Mathew D. Mann, M. D., published in *The American Journal of the Medical Scienees* for August, and reviewed in THE MEDICAL AND SURGICAL REPORTER for September 8th, page 341.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES

for September.

Two papers appear in this issue on the subject of Leprosy. The first is by Dr. James Nevins Hyde entitled

The Distribution of Leprosy in North America.

The author does not include syringomyelia, Morvan's disease, scleroderma, morphœa, Raynaud's disease, or ainhum as among the manifestations of leprosy, as he thinks there is not yet sufficient evidence to establish these as forms of the malady. He is also of the opinion that the tubercular, anæsthetic, macular, mutilating, and mixed forms of lepra should figure no longer in the statistics of the disease. They are not varieties, but different external expressions of one and the same malady, often simultaneously shown in the same patient. From the data at his command he computes that there are ninety-two lepers now alive in this country. "There are actually two lepers in Florida; and usually from one to three in Illinois, and the same number in New York. One is known to be in Texas, two in Idaho, two in Pennsylvania, four in South Carolina. There are probably more than threescore of lepers in Louisiana, and less than half that number in the States of the Northwest. This suggests an approximate estimate of between one hundred and two hundred cases of lepro y. Competent

observers have estimated that the total number is between ninety and one hundred and fifty. It can scarcely be doubted that in each of the last fifteen years there have rarely been fewer than one hundred lepers living within the territorial borders of our country." The author cites an instance of a leper twice making the journey from Chicago to Sweeden and finally dying in Chicago.

"These figures," he says, "are not to be reviewed either with the hysterical alarm of the timid or with the careless indifference of the unwary. They call for intelligent discussion and for a wise provision, alike for the need of the unfortunate leper and for the safety of the community in which the infected are now living. There are greater problems presented to the physicians of America than those growing out of these interesting statistics. Tuberculosis alone exposes at present, to a greater danger than lepra, the health of our population. But enough lepers are now sheltered upon this soil to offer a menace to the welfare of its inhabitants and to propose a problem in State and sanitary scientific which I believe the General Government alone can rightly solve."

The second paper on the subject is

The Diagnostic Features and Treatment of Leprosy

By Dr. Prince A. Morrow. The author summarizes his conclusions as follows:

1. From the standpoint of scientific therapusis, a clear conception of the pathogenesis and pathological anatomy of leprosy is an essential condition in formulating the principals of rational treatment.

2. It is now generally conceded that Hansen's bacillus is the active, efficient cause of leprosy, and that the presence of the bacilli in the tissues sets up either directly, or indirectly through their toxines, the vast array of organic changes and functional disorders peculiar to the disease.

3. There is no substance known to science which, introduced into the body, is capable of destroying the bacilli without destroying the living cells which contain them.

4. Furthermore, from the nature of the pathological changes and the position of the bacilli in the deeper tissues, it is evident that no germicidal agent can be brought into direct contact with the pathogenetic organisms, and hence all treatment which has for its object the destruction of the bacilli is impossible of application.

5. The treatment of leprosy by injections of tuberculin has been disappointing in its results. Experiment has shown that the action of tuberculin is positively pernicious in setting free the bacilli in the tissues and determining the development of new foci of the disease.

6. The treatment of leprosy is essentially empyrical; whether, as has been claimed, certain remedies act by virtue of sterilizing properties upon the living tissues, rendering them unsuitable to the growth and multiplication of the bacilli, cannot be determined.

7. The more or less rapid development of leprosy depends upon the resistance of the tissues to the inroads of the bacilli. In exceptional but well authenticated cases, this capacity of resistance is sufficient to dominate and destroy the pathogenetic microbes, as shown by the observation of abortive cases in which indubitable signs of the disease definitely disappear and never recur.

8. This capacity of resistance may be strengthened by change of climate, improved habits of living, and measures calculated to build up and maintain the general health at the highest standard.

9. Observation shows that the removal of a leper from an infected district to a more favored climate exerts a marked modification on the course of the disease; there is, for a time, at least, an arrest or retrogression of the symptoms. This lull in the manifestations is, as a rule, disappointing in its duration. Of the one hundred and sixty Norwegian lepers who have emigrated to this country, there is no record of a single definite cure.

10. A dry, moderately cool, mountain atmosphere is most favorable in its influence upon the disease. A hot moist climate, or a damp cold climate are both unfavorable.

11. A nutritious diet of fresh meat and vegetables, warm clothing, exercise in the open air, freedom from exposure to damp and cold, are important elements in the hygienic course of treatment.

12. The care of the skin by frequent hot baths, massage, with inunctions of oils, etc, should receive as much attention as the constitutional treatment.

13. The special remedies which clinical experience would indicate to be of the most value, are chaulmoogra oil, gurjun oil, arsenic, and certain agents of the strychnos family; all are, however, more or less disappointing in their results.

14. All observers agree that in advanced cases, where general dissemination of the bacilli has taken place, curative treatment is absolutely futile. The most favorable conditions are that treatment be instituted early, and that it be prosecuted actively and energetically during a prolonged period.

15. The surgical treatment of leprous sores, necrosed bones, perforating ulcers, the excision of tuberoles, amputation of the members, tracheotomy, various delicate operations about the eyes, nerve-stretching for the relief of pain, the removal of threatening complications, are of the most signal benefit.

16. Finally, we may conclude that while medical science holds out no definite promise of cure to the leper, its resources are sufficient to arrest or retard the progress of his disease, to promote his comfort, and to prolong his life.

The paper by Drs. William E. Hughes and William S. Carter entitled

A Clinical and Experimental Study of Uræmia

Is concluded in this issue. As the result of the numerous experiments the authors have come to the following conclusions:

1. Uræmia is an intoxication by a poison circulating in the blood.

2. This poison is present in serous effusions as well as in the blood.

3. It is probable that in addition to the dathogenic poison of uræmia there are, under certain conditions, other secondary ones active in its production.

4. The poison producing ursemia will also produce nephritis and a fatty degeneration of the retina, and cause of the eye symptoms in Bright's disease.

5. This poison is probably some albuminous substance. It is effected by heat and is only with difficulty dialyzable.

6. In is probable, but not certain, that this poison is not constantly circulating in the blood, but that under exceptional conditions it becomes developed.

7. It is possible to have uræmia without any previously existing lesion in the kidneys.

As to the treatment of the convulsions, the authors advise the use of chloroform, ether or nitrite of amyl by inhalation. Morphine in full doses may be used with advantage. The authors state that the use of morphia is attensed with very little risk, but its effect must, however, be carefully watched. Especially where uræmia complicates fevers must the greatest care be used, for these are the cases in which it is most likely to do harm. The bowels should be kept free, preferably with the vegetable purgatives. If calomel be used, it must be remembered that mercurial salivation is sometimes easily produced in Bright's disease. The skin should be kept active, preferably by the use of the hot pack or the hot air bath. If there is pyrexia, heat should be carefully applied and the temperature constantly watched. If there is any rise such an attempt to produce perspiration must be abandoned. Pilocarpin must be used with care for its use is not unattended with danger.

As the poison is contained in serous effusions as well as in the blood, and as resorption of these effusions may throw enough of the poison into the blood to cause uræmia, it is necessarv to withdraw effusions whenever met with, as early as possible. No condition of the patient will contraindicate tapping.

The authors also urge free venesection. They are of the opinion that it may abort an attack of uræmia. A pronouncedly weak pulse will in no wise forbid its employment, for they state that they have repeatedly seen the pulse strengthen while blood was flowing. The quantity to be drawn will depend upon the exigencies of the case and the effect produced, being, as a rule, not less than a pint, or even a quart or more. Bloodletting may be beneficially supplemented by transfusion of a normal saline solution. Especially is this valuable where the loss of blood threatens to weaken the heart too much. The saline solution is also diuretic, and may possibly be a direct antidote to the poison. The transfusion may be done intra-venously in exceptional cases when time is of importance; but this may entail some danger unless most carefully performed. Practiced subcutaneously, it will be found that absorption is marvelously rapid. In a case of pulmonary œdema, where its use would be theoretically contraindicated, it was followed by a most prompt relief of the symptoms, which bloodletting alone failed to abate. Diuretics are practically of no value. The authors suggest that the origin of the poison may probably be found in the food and is produced somewhere in the digestive system. The paper is profusly illustrated.

F. Parkes Weber, M. A., M. D., M. R. C. P. (Lond.) contributes an article on "The Pathology of Arterio-sclerosis", in which, after considering various hypotheses, he confesses that the etiology ot arterio-sclerosis remains as yet uncertain. The condition must still be regarded as a primary one in pathology, though in some way allied to some of its alleged causes.

The remaining papers in this issue are: "The Therapeutics of Infectious Processes in the Nervous System," by F. X, Dercum, M. D.; "Foot-ball and the Physique of its Devotees, from the Point of View of Physical Training," by Henry G. Beyer, M. D., Ph. D., Surgeon U. S. Army.

Nævi and Maternal Impressions.

Since the days when a certain historic progenitor made large capital out of peeled saplings and probably from an even remoter age than his, there has existed, says the *London Lancet*, among mankind a belief in the causation of birth-marks by previous maternal impression. A singular illustration of this fact is to be found in a case lately recorded by one of the American papers. The mother, an Italian, while pregnant, was frightened by seeing a snake among some fruit she was handling. In due time her child was born, and from birth displayed a peculiar mark upon the neck. This gradually assumed the form and appearance of a serpent, was deeply pigmented, and somewhat scaly. The tale is, indeed, a strange one. Had it come through any less reliable channel than a publication of the Transatlantic press we should probably have dismissed without question its pretensions to veracity. As it is we cannot resist the impression that facts and appearances must have been much exaggerated and altered since the original facts of evidence went on the ever widening circuit of rumor. Nævi, it is well-known, may occupy any part of the surface of the body, may vary indefinitely in shape, are usually pigmented, and frequently possess a thickened and rough integument. In view of these facts it is difficult, even with the aid of a description almost circumstantial enough to find the mimic snake its place among the Reptilia, to resist a conviction that imagination has done much in this history to give color and shape to a clinical curiosity. The whole theory of maternal impression, however appropriate, beautiful, or strange, partakes of a character too nearly related to allegory to secure for its revelations a place among the accredited discoveries of science.—*Maryland Medical Journal.*

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M. D.

MEDICINE

Snuff-Tobacco as a Remedy Against Hiccough.

In the *Vratch*, No. 14, 1894, p. 423, Dr. G. Tatevosoff, of Vozdvijenskaia Slobada, Caucasian Russia, draws attention to the excellent services which may be obtained from the ordinary snuff-tobacco as a means for cutting short hiccough. He relates an instructive case of a patient with some chronic chest disease, accompanied by violent cough attacks in whom the latter used to be followed by extremely obstinate hiccough. The common remedies (including cocaine) failing to exercise any controlling influence on this most distressing symptom, Dr. Tatevosoff at last decided to give a trial to the said old-fashioned popular means, making the patient on each occasion thoroughly snuff into his nose a pinchful of the powder until the appearance of a lively sneezing. From the first *seance* "the effect was truly brilliant, the hiccough subsiding as if by magic." Under the influence of the simple remedy the attacks steadily became milder, and ultimately vanished, though the patient's cough remained as intractable as ever.—*St. Louis Med. and Surg. Journal.*

The Effect of Ether and Chloroform on the Kidneys.

Wunderlich (*Annals of Surgery*,) after the examination of the urine in 125 cases, before and after anæsthesia, draws the following conclusions as to the effect of ether and chloroform narcosis on the kidneys:

1. An already existing albuminuria is often increased by etherization. No such case in which chloroform was given was observed.
2. Albuminuria can be caused by narcotization with chloroform and ether, more often with chloroform, the relative frequency with which it occurs after the use of chloroform and ether being 11.5 to 6.9.
3. As a result of the use of chloroform, casts may appear in the urine. This is less frequent after the use of ether. The relative of frequency is 34.8 to 24.6.
4. When casts are already present, both anæsthetics have the effect of of increasing the number.—*Boston Med. and Surg. Jour.*

Epistaxis.

Plethoric cases are relieved by:

℞ Tinct. aconite..... gtt. viij
Liq. ammon. acetat..... ℥j. M

Sig.—Teaspoonful every half hour.

SURGERY.

The Dangers of the Long Rectal Tube.

The use of the long rectal tube in cases of obstruction, or supposed obstruction of the bowel, has never been looked upon with favor by good anatomists. The finding of the traditional needle in the haystack is but little more difficult than the successful maneuvering of the rectal tube through the twists and turns of the sigmoid flexure. The question of the value and safety of this tube having been asked of the *British Medical Journal*, the matter was referred to Mr. Harrison Cripps who replied as follows to that journal:

Traditions die hard, and notwithstanding the condemnation of the long rectal tube by Brodie, Treves and many other eminent authorities, I still find that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately, these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promotory of the sacrum, they simply coil up and do no harm. If stiffer ones are used, the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube. The injection never returned. A few hours afterwards, owing to the acute symptoms of the patient, I assisted one of my colleagues in opening the abdomen. The soap and water and oil we found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum. The patient died. The idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treating stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present, it would be 100 to 1 against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac, generally caused by the invagination of the stricture. If a stricture be not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lectures, alludes to a case in which a worthy practitioner had spent 150 hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.—*Columbus Medical Journal.*

The Treatment of Fracture by Massage.

Sevenin, of Moscow, reports 24 cases of fractures treated by massage, and claims a great future for this treatment. To hasten union he gives three times daily a powder consisting of two grains of phosphate of iron and five grains of phosphate of lime. He demonstrates the beneficial action of this powder in relating his last four cases which took an unusual short time in healing. One of these cases, a fracture of the surgical neck of the humerus in a washerwoman of fifty-two years of age, showed no more crepitation on the eighth day, the abnormal mobility had ceased, and on the sixteenth day the patient could raise her arm in a horizontal position.—*Pacific Med. Journ.*

OBSTETRICS.

Diagnosis of Early Pregnancy.

Dr. R. L. Dickinson makes an interesting report of original investigations made by him to discover how early pregnancy may be diagnosed. He relies entirely upon the bimanual method of examination. It is easy to see that an expert in this method of examination, and one who has plenty of material, could certainly make a diagnosis at an earlier period than is usually the custom with practitioners. Dr. Dickinson concludes his article as follows: We offer then tentatively six bimanual signs of early pregnancy, stated in the order of their appearance and importance, and in the order of the frequency with which they are found, they run as follows (except that compressibility of the isthmus and the change of the consistency of the body possibly outrank the rest):

1. Bellying or bulging of the body of the uterus.
2. Elasticity or boggyness of the body of the uterus.
3. Compressibility of the lower uterine segment.
4. Transverse fold (about four to six weeks).
5. The longitudinal fold or furrow.
6. The decidual spot (about six to eight weeks).—*Atlanta Med. and Surg. Journ.*

Glycerine Injections as an Oxytocic.

Pelzer (*British Medical Journal*) read a communication on this subject at a recent meeting of the Cologne Obstetric Society. He had collected 28 cases, including 19 in his own experience. Glycerine was used 18 times for induction of premature labor; in 15 of these cases the pelvis was narrowed, in 2 there was Bright's disease, and in 1 placenta previa. To stimulate uterine action at term glycerine was injected in 7 cases of simple atony, in 2 of placenta previa, and in 1 for some other complication. The pains came on after an average interval of two hours following the injection. Eight to ten hours elapsed before complete dilatation of the os, or a longer space of time in cases of contracted pelvis. Two of the mothers died, both from severe eclampsia; the fetus was putrid in both cases. One child required craniotomy on account of its great size. Three children died from placenta previa and strangulation by the funis. One, hardly 32 weeks old, died a quarter of an hour after birth. Only in one case could the violence of the pains be a possible cause of the death of the child. The glycerine had done its duty. Pelzer, however, deprecates injudicious zeal about this method; 30 to 50 cubic centimetres, not 100 cubic centimetres, are sufficient for injection. The method is not suitable for cases of eclampsia and placenta previa, except the lateral variety, where the placenta can be avoided. —Geuer (*ibid*) read notes of three cases of induction of premature labor by injection of glycerine, in all of which both mother and child were saved. The first two mothers were over 32, with contracted pelvis; craniotomy had been performed in previous labors. The third case was an instance of bad eclampsia; 40 grammes of glycerine were injected, the os being at the time uncontracted; there was edema, with much albuminuria. Forty hours later a healthy living child was born.

ARMY AND NAVY.

CHANGES IN THE U. S. ARMY FROM SEPTEMBER 2, 1894, TO SEPTEMBER 8, 1894.

Leave of abscence for twenty days to take effect October 10, 1894, is hereby granted Captain Jefferson R. Kean, Assistant Surgeon.

Leave of absence for one month, to take effect on being relieved from duty at Washington Barracks, D. C., with permission to apply for an extension of fifteen days, is granted Major Joseph K. Corson, Surgeon.

Leave of absence for four months on Surgeon's certificate of disability, is granted Major Washington Matthews, Surgeon.

Leave of absence for one month and fifteen days to take effect on or about September 10, 1894, is granted Captain Charles B. Ewing, Assistant Surgeon.

First Lieutenant James M. Kennedy, Assistant Surgeon, will be relieved from duty at Fort Custer, Montana, and will report in person for duty at Camp Merritt, Montana.